HYRUM STATE PARK
GROUP AREA RESTROOM

HYRUM CITY, UTAH

MARCH 2006

ARCHITECTURAL NEXUS PROJECT NUMBER: 05160

OWNER

STATE OF UTAH,

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DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
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Spectrum Engineers

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ELECTRICAL ENGINEER

BEAZER ENGINEERING

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LOGAN, UTAH, 84321
PHONE: (435) 753-1250 CONTACT: DAVE BEAZER
FAX: EMAIL: beazer@qwest.net

APPROVALS

DFCM DATE

DESIGN CRITERIA

APPLICABLE CODES

INTERNATIONAL BUILDING CODE	2003 EDITION
ACCESSIBILITY CODE	ANSI/CABO A117.1 1998
INTERNATIONAL MECHANICAL CODE	2003 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE	2000 EDITION
INTERNATIONAL PLUMBING CODE	2003 EDITION
NATIONAL ELECTRICAL CODE	2002 EDITION
ZONING ORDINANCE: ...HYRUM CITY	CURRENT EDITION

OTHER CRITERIA

DEFERRED SUBMITTALS

SCHEDULE OF DRAWINGS

GENERAL
G001 COVER
G002 GENERAL INFORMATION
G003 ACCESSIBILITY COMPLIANCE
G004 WALL TYPES & UL LISTINGS

SITE / CIVIL
C-100 GENERAL NOTES
C-101 SITE PLAN
C-102 GRADING PLAN
C-103 UTILITY PLAN
C-501 CIVIL DETAILS
C-502 CIVIL DETAILS

ARCHITECTURAL
A101 FLOOR PLAN
A151 REFLECTED CEILING PLAN
A201 EXTERIOR ELEVATIONS AND BUILDING SECTIONS
A251 INTERIOR ELEVATIONS
A501 ARCHITECTURAL DETAILS
A601 DOOR & WINDOW SCHEDULES & DETAILS

STRUCTURAL
S-001 STRUCTURAL NOTES
S-100 STRUCTURAL PLANS
S-501 STRUCTURAL DETAILS
S-502 STRUCTURAL DETAILS

MECHANICAL
M001 SHEET INDEX / SYMBOL SCHEDULE
M002 MECHANICAL SPECIFICATIONS
M003 PLUMBING SPECIFICATIONS
M004 PLUMBING SPECIFICATIONS
M101 MECHANICAL PLANS
M501 MECHANICAL SCHEDULES & DETAILS
M502 PLUMBING SCHEDULES & DETAILS

ELECTRICAL
ES-101 ELECTRICAL SITE PLAN
E-201 RESTROOM LIGHTING PLAN
E-202 PAVILION ELECTRICAL PLAN
E-301 RESTROOM POWER PLAN

State of Utah
Department of Administrative Services

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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE

COVER SHEET

SHEET NUMBER

G001

SHEET 1 OF 31

BID SET

HATCH LEGEND

NOTE: HATCHING ANGLES MAY VARY DUE TO ANGLE OF WALL DRAWN, WHILE HATCHING PATTERN REMAINS SIMILAR.

PLAN HATCH

- CAST-IN-PLACE CONCRETE
- CONCRETE MASONRY UNIT
- PRECAST CONCRETE / GLASS FIBER REINFORCED CONCRETE (GFRC)
- STEEL STUDS
- WOOD STUDS
- BRICK VENEER
- EXTERIOR INSULATION FINISH SYSTEM (EIFS)
- DEMOLITION
- EXISTING TO REMAIN
- 1-HOUR RATED STUD WALL
- 2-HOUR RATED STUD WALL
- 3-HOUR RATED STUD WALL
- SMOKE SEPARATION WALL

SECTION HATCH

- BLANKET INSULATION
- CONTINUOUS MATERIAL
- NON-CONTINUOUS MATERIAL (BLOCKING)
- GYPSUM BOARD
- PLYWOOD
- SUB GRADE BASE
- UNDISTURBED SOIL
- BACKFILLED SOIL

DRAWING SYMBOL LEGEND

INTERIOR ELEVATIONS
A3 / A2 / A401 — SHEET NUMBER
A1 — DETAIL NUMBER

DETAIL REFERENCE
A1 — DETAIL NUMBER
A501 — SHEET NUMBER

EXTERIOR ELEVATION REFERENCE
A1 — DETAIL NUMBER
A201 — SHEET NUMBER

WALL SECTION REFERENCE
A1 — DETAIL NUMBER
A302 — SHEET NUMBER

BUILDING SECTION REFERENCE
A1 — DETAIL NUMBER
A301 — SHEET NUMBER

ROOM DESIGNATION (FLOOR PLAN)
ROOM NAME — ROOM NAME
101 — ROOM NUMBER

ROOM DESIGNATION (REFLECTED CEILING PLAN)
101 — ROOM NUMBER
9'-0" — CEILING HEIGHT ABOVE FINISH FLOOR

ELEVATION SYMBOL
T.O. WALL — ELEVATION DESCRIPTION
100'-0" — ELEVATION ABOVE DATUM

WALL TYPE DESIGNATION
01 — WALL TYPE

DOOR DESIGNATION
101 — DOOR NUMBER

WINDOW DESIGNATION
A — WINDOW TYPE

KEYED NOTE DESIGNATION
1 — KEY NOTE NUMBER

EQUIPMENT DESIGNATION
00001 — EQUIPMENT NUMBER

GLASS TYPE DESIGNATION
1 — GLASS TYPE

REVISION DESIGNATION
1 — REVISION NUMBER

LIST OF ABBREVIATIONS

AB	ANCHOR BOLT	LAM	LAMINATE
ACOUST	ACOUSTICAL	LAV	LAVATORY
A/C	AIR CONDITION	LT	LIGHT
ALUM	ALUMINUM		
ANOD	ANODIZED	MH	MAN HOLE
ARCH	ARCHITECT	MATL	MATERIAL
ASPH	ASPHALT	MFR	MANUFACTURE
@	AT	MAX	MAXIMUM
		MECH	MECHANICAL
BD	BOARD	MET	METAL
BLKG	BLOCKING	MEZZ	MEZZANINE
BLDG	BUILDING	MIN	MINIMUM
BM	BEAM	MTD	MOUNTED
BOT	BOTTOM	MULL	MULLION
BRK	BRICK		
		NG	NATURAL GRADE
CI	CAST IRON	NOM	NOMINAL
CB	CATCH BASIN	NIC	NOT IN CONTRACT
CLG	CEILING	NO #	NUMBER
CEM	CEMENT	NTS	NOT TO SCALE
CL	CENTER LINE		
CHNL	CHANNEL	OBS	OBSCURE
CLF	CHAIN LINK FENCE	OC	ON CENTER
CT	CERAMIC TILE	OPNG	OPENING
CLR	CLEAR	OPP	OPPOSITE
CO	CLEAN OUT	OAL	OVERALL LENGTH
COL	COLUMN	OD	OUTSIDE DIAMETER
CONC	CONCRETE	OFD	OVERFLOW DRAIN
CONST	CONSTRUCTION	OFCI	OWNER FURNISHED CONTR
CONTR	CONTRACTOR		INSTALLED
CJ	CONTROL JOINT	PR	PAIR
CONT	CONTINUOUS	PTN	PARTITION
CTR	CENTER	d	PENNY (NAIL SIZE)
CMU	CONC MASONRY UNIT	PERP	PERPENDICULAR
		PLAST	PLASTER
DB	DECIBEL	PL	PLATE
DEG	DEGREE	PLI	PLIES
DET	DETAIL	PLAM	PLASTIC LAMINATE
DIA	DIAMETER	PLMB	PLUMBING
DIM	DIMENSION	PLYWD	PLYWOOD
DN	DOWN	PT	POINT
DS	DOWNSPOUT	LB	POUNDS
DWG	DRAWING	PSI	LBS PER SQUARE IN
		PSF	LBS PER SQUARE FT
EA	EACH	PVC	POLYVINYL CHLORIDE
ELEC	ELECTRIC		
ELEV	ELEVATION	QT	QUARRY TILE
EQ	EQUAL		
EQUIP	EQUIPMENT	RAD	RADIUS
EXH	EXHAUST	REF	REFRIGERATOR
EXP	EXPANSION	REQD	REQUIRED
EJ	EXPANSION JOINT	REV	REVISION
EXIST	EXISTING	RF	ROOF
EXT	EXTERIOR	R	RISER
EIFS	EXT INSUL FIN SYSTEM	RD	ROOF DRAIN
		RM	ROOM
FT	FEET	ROW	RIGHT OF WAY
FIN	FINISH		
FG	FINISH GRADE	SCHED	SCHEDULE
FIXT	FIXTURE	SECT	SECTION
FLR	FLOOR	SEL	SELECT
FD	FLOOR DRAIN	SHT	SHEET
FEC	FIRE EXTING CAB	SIM	SIMILAR
FS	FLOOR SINK	SS	STAINLESS STEEL
FND	FOUNDATION	SLDG	SLIDING
FLUOR	FLUORESCENT	SPEC	SPECIFICATION
FOS	FACE OF STUD	SQ	SQUARE
FTG	FOOTING	STD	STANDARD
FUR	FURRING	STL	STEEL
FV	FIELD VERIFY	STRUCT	STRUCTURAL
		SUSP	SUSPENDED
GA	GAUGE		
GALV	GALVANIZED	TEL	TELEPHONE
GC	GENERAL CONTR	THK	THICK
GL	GALVANIZED IRON	T&G	TONGUE & GROVE
GFRC	GL FIBER REINF CONC	TBC	TOP BACK OF CURB
GFRG	GL FIBER REINF GYP	TOF	TOP OF FOOTING
GRD	GRADE	TOW	TOP OF WALL
GRND	GROUND	T	TREAD
GYP BD	GYPSUM BOARD	TYP	TYPICAL
HDR	HEADER	UNO	UNLESS NOTED
HDW	HARDWARE		OTHERWISE
HDWD	HARDWOOD	UR	URINAL
HGT	HEIGHT		
HM	HOLLOW METAL	VERT	VERTICAL
HORIZ	HORIZONTAL	VG	VERTICAL GRAIN
HB	HOSE BIB	VEST	VESTIBULE
HW	HOT WATER	VCT	VINYL COMPOSITE TILE
		VNR	VENEER
IN	INCH		
ID	INSIDE DIAMETER	WC	WATER CLOSET
INSUL	INSULATION	WH	WATER HEATER
INT	INTERIOR	WP	WEATHER PROOF
INV	INVERT	WF	WIDE FLANGE
		WMN'S	WOMEN'S
JAN	JANITOR	W/	WITH
JST	JOIST	W/O	WITH OUT
JT	JOINT	WD	WOOD
		WDW	WINDOW
		WR	WATER RESISTANT
		WWF	WELDED WIRE FABRIC

STATE OF UTAH / BOBBY PETROFF, JR. / 6/16/06 / 132536 / LICENSED ARCHITECT

State of Utah
Department of Administrative Services

Division of Facilities Construction & Management
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IMPROVEMENTS

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ISSUE TYPE: CONSTRUCTION DRAWINGS.

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

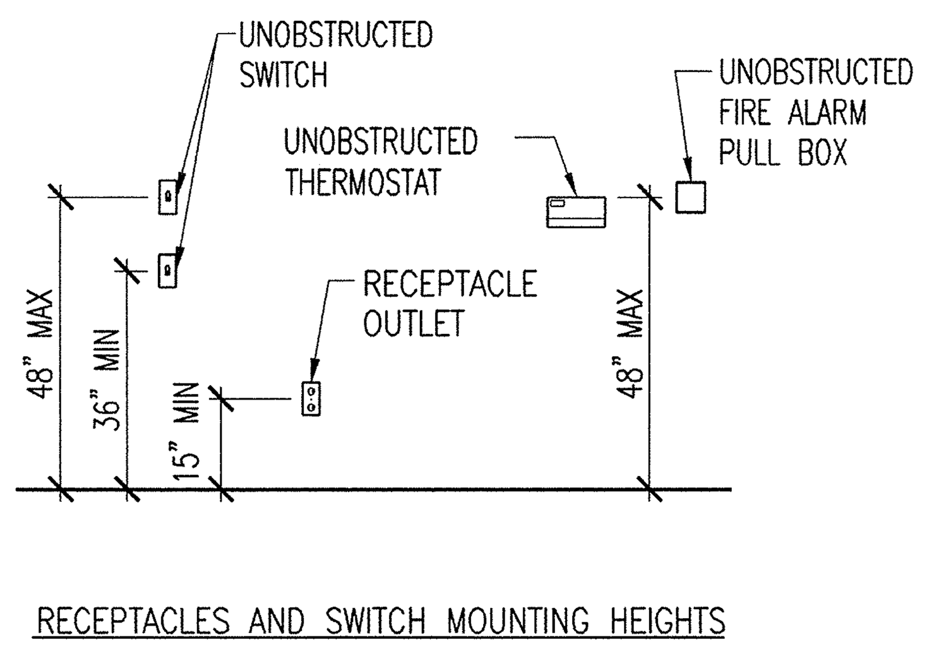
SHEET TITLE

GENERAL INFORMATION

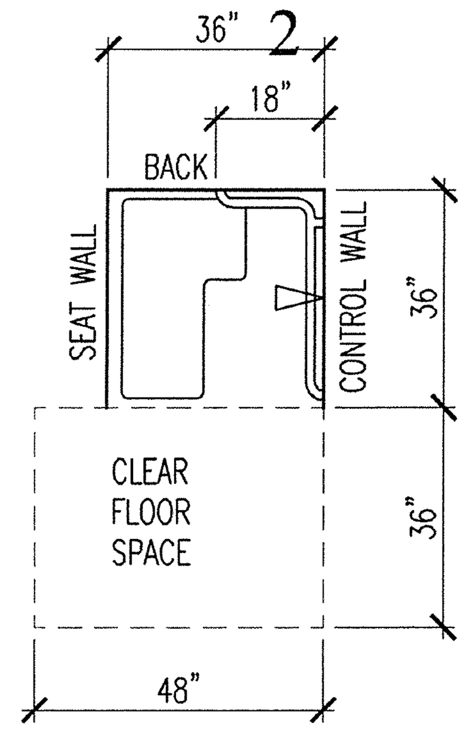
SHEET NUMBER

G002

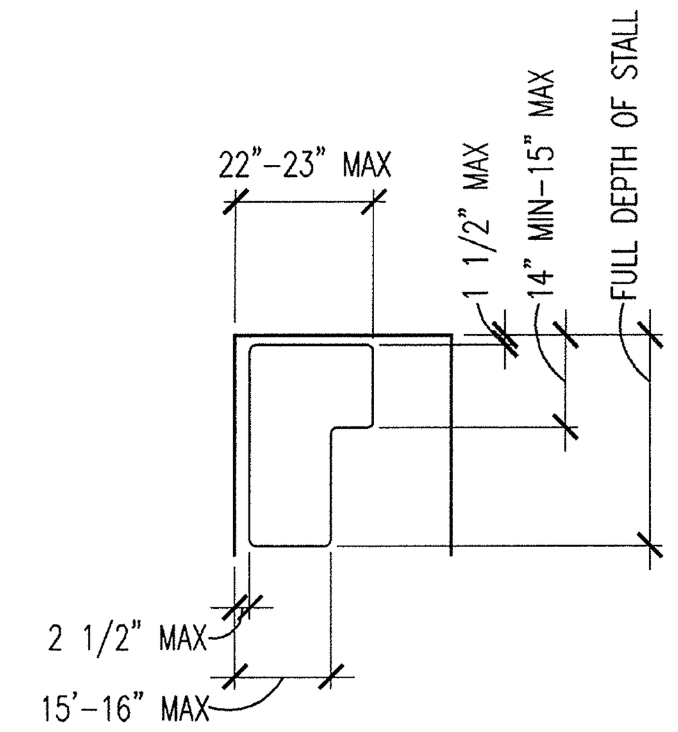
BID SET



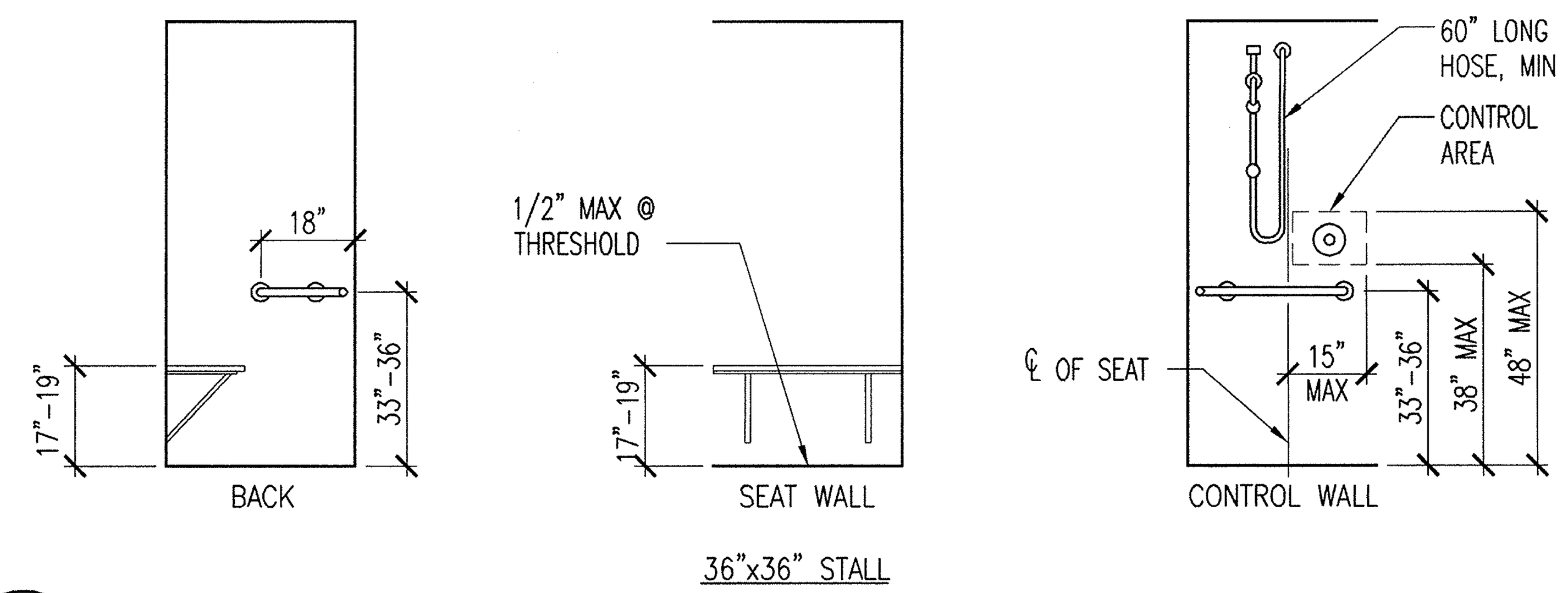
D1 MISC MOUNTING HEIGHTS
G003
SCALE: 3/8" = 1'-0"
MMH



D2 TRANSFER SHOWER STALL
G003
SCALE: 3/8" = 1'-0"
TSS



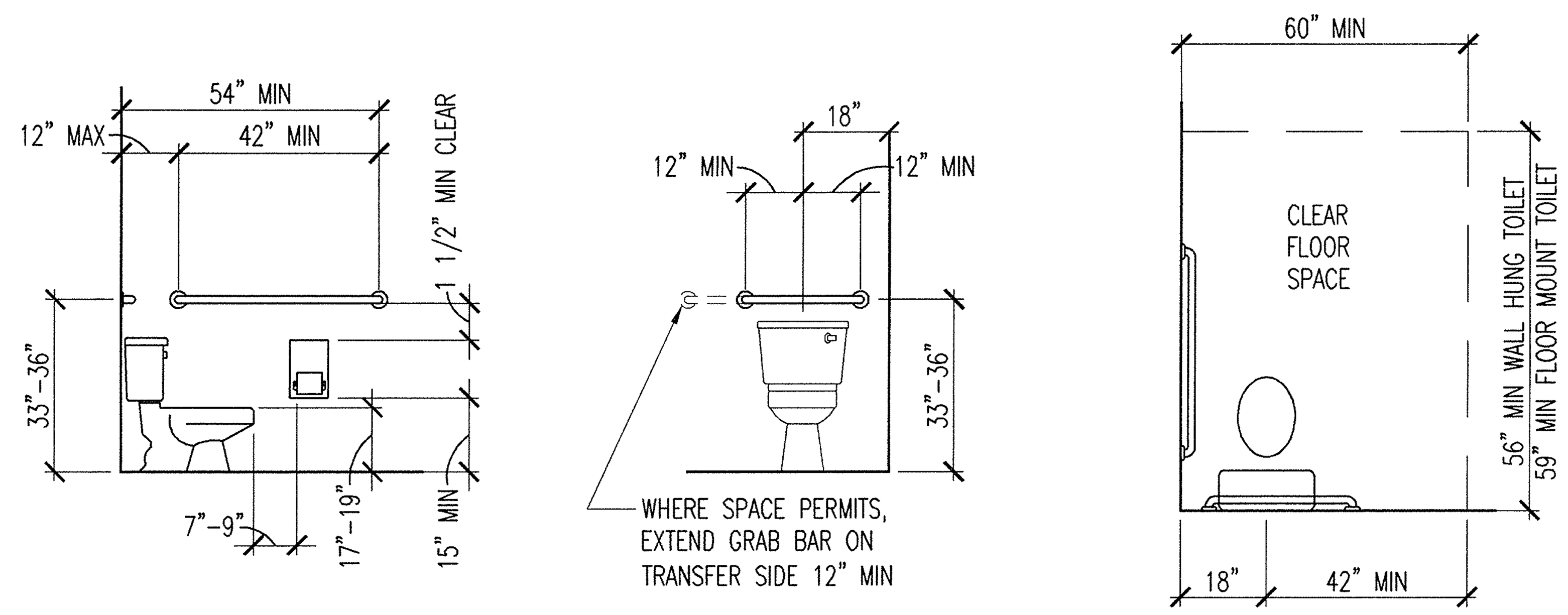
D3 SHOWER SEAT DESIGN
G003
SCALE: 3/8" = 1'-0"
SSD



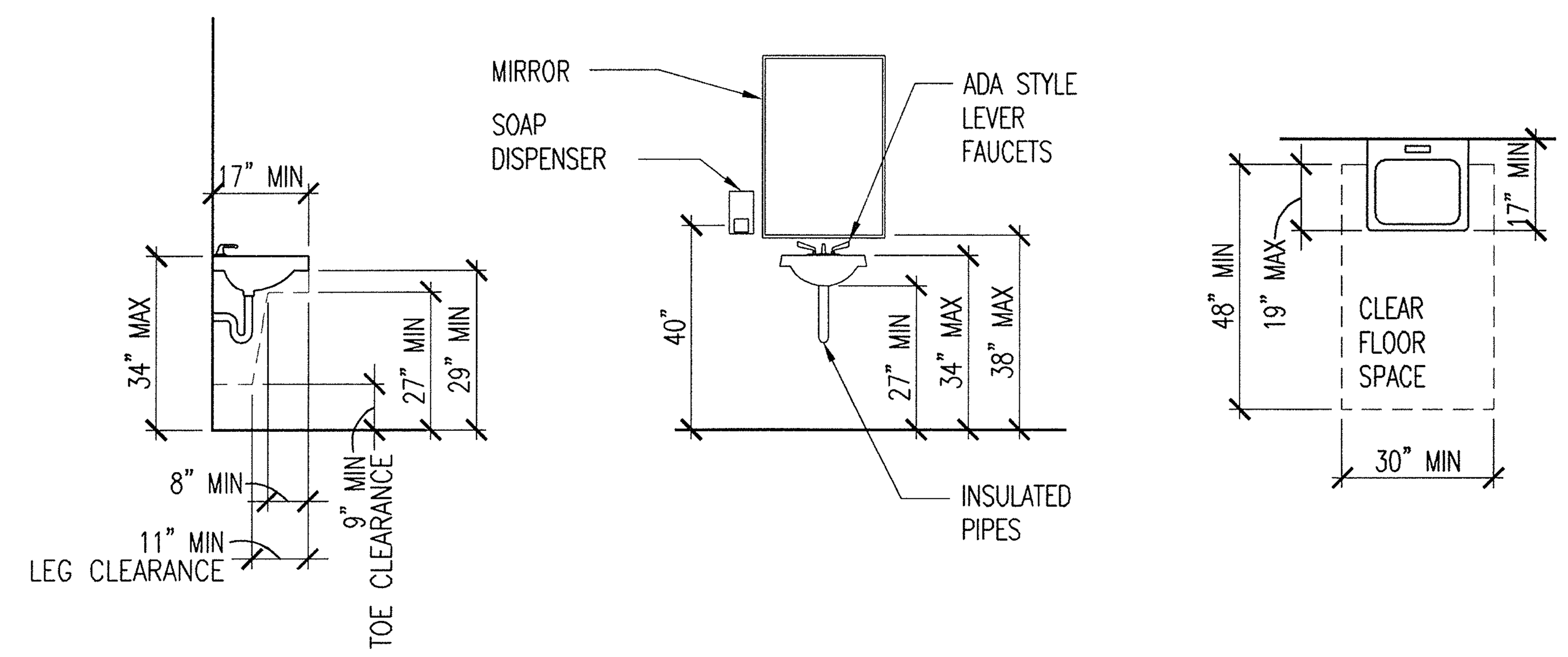
D4 36" x 36" SHOWER STALL
G003
SCALE: 3/8" = 1'-0"
36X36SS

ACCESSIBILITY COMPLIANCE GENERAL NOTES:

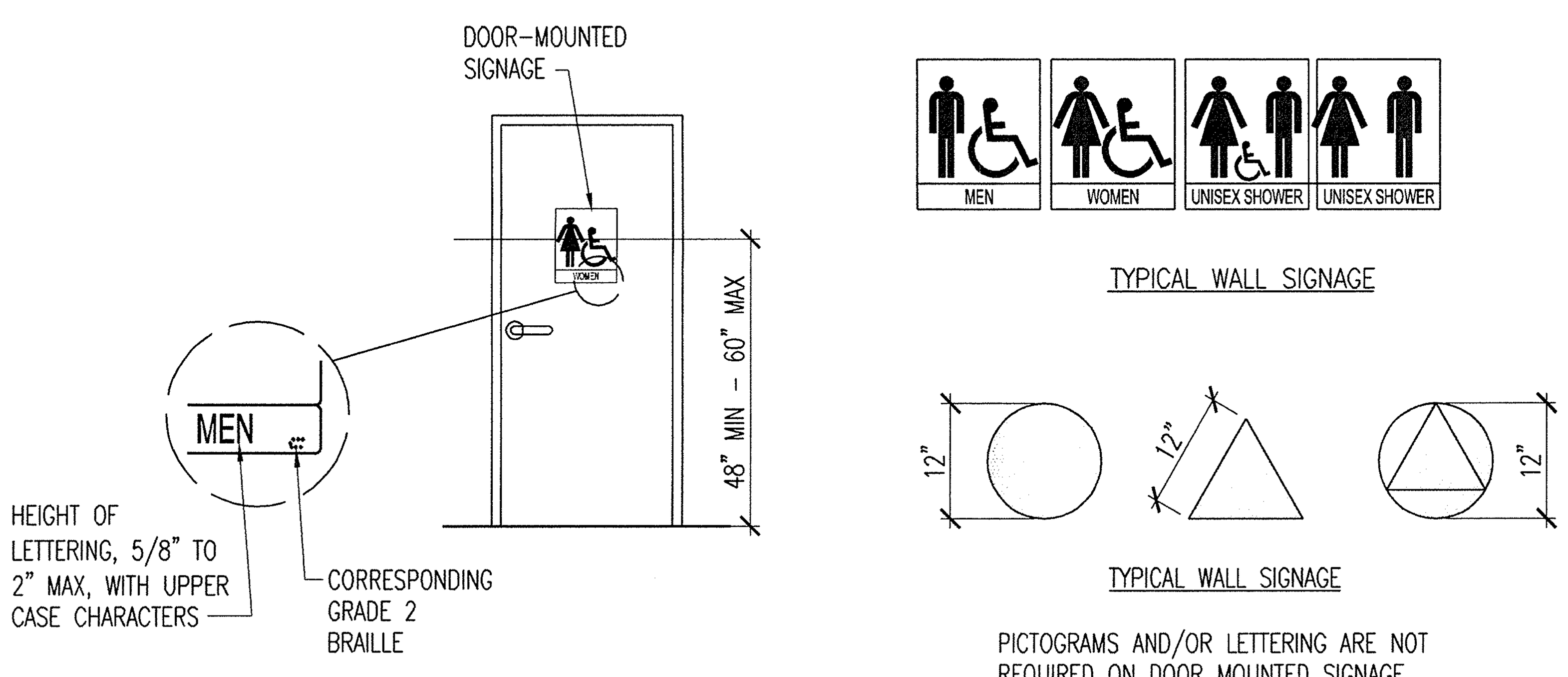
1. GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IF CLEARANCES AND REQUIREMENTS SHOWN CAN NOT BE ACHIEVED.



C1 ACCESSIBLE TOILET DETAIL
G003
SCALE: 3/8" = 1'-0"
ATOILETD

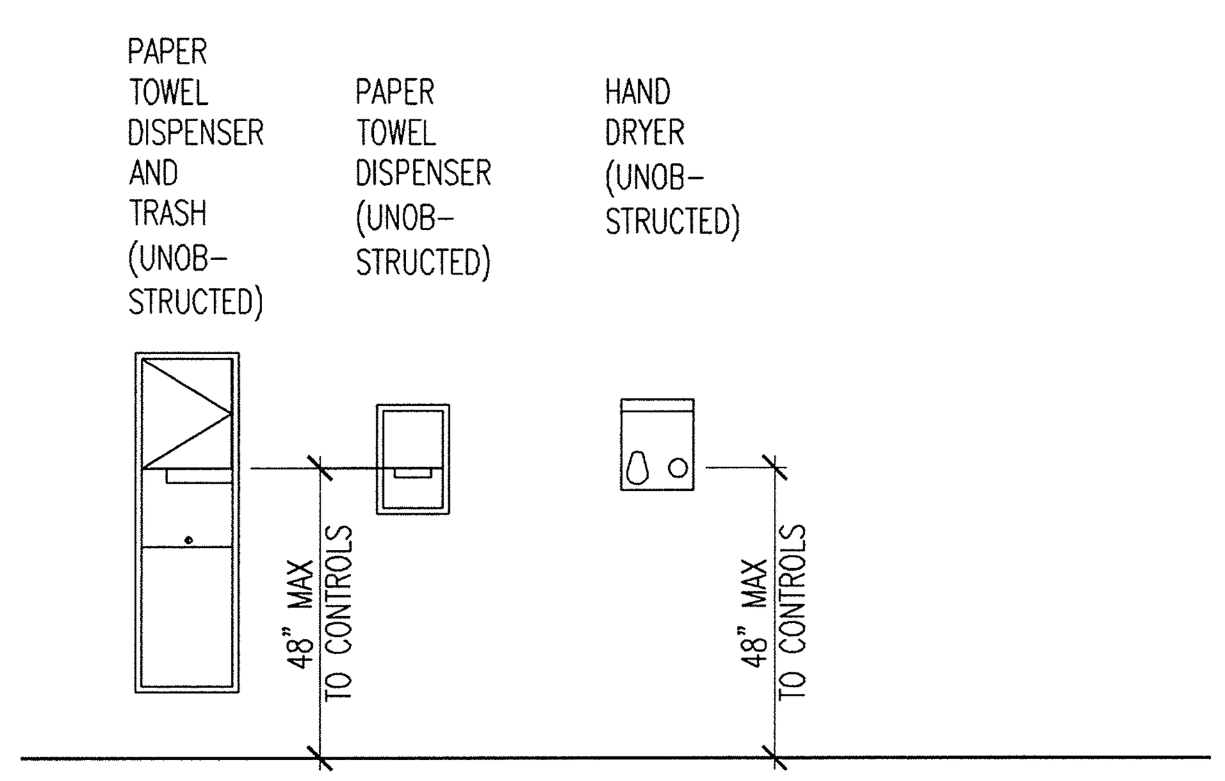


C3 ACCESSIBLE SINK DETAIL
G003
SCALE: 3/8" = 1'-0"
ASINKD



PICTOGRAMS AND/OR LETTERING ARE NOT REQUIRED ON DOOR MOUNTED SIGNAGE

B1 RESTROOM SIGNAGE
G003
SCALE: 3/8" = 1'-0"
RSIGN



B3 RESTROOM MOUNTING HEIGHTS
G003
SCALE: 3/8" = 1'-0"
RMH

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DRAWN BY: MJW
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SHEET TITLE
ACCESSIBILITY COMPLIANCE

STATE OF UTAH BOBBY PETROFF, JR. 06/16/06 132536 LICENSED ARCHITECT

SHEET NUMBER
G003

BID SET

IBC 2003 - GENERAL CODE REQUIREMENTS NEW CONSTRUCTION

CODE REFERENCE		RESTROOM BUILDING	
OCCUPANCY CLASSIFICATION (SECTIONS 302-312)		B	
INCIDENTAL USE AREA(S) (SECTION 302.1.1 & TABLE 302.1.1)	REQUIRED SEPARATION		
1. INCIDENTAL USE AREA		NA	
ALLOWABLE HEIGHT (SECTION 503 & TABLE 503)	HEIGHT / STORIES	HEIGHT / STORIES	HEIGHT / STORIES
BASE ALLOWABLE HEIGHT (ABOVE GRADE PLANE)		40'-0" /2	
HEIGHT INCREASE FOR SPRINKLERS (SECTION 504.2)		NA	
ACTUAL HEIGHT		11'-8" /1	
ALLOWABLE AREA (SECTION 503 & TABLE 503)			
BASE ALLOWABLE AREA (PER FLOOR)		9,000 SF	
INCREASED ALLOWABLE AREA PER FLOOR (EQUATION 5-1)		NA	
MAXIMUM AREA [INCR ALLOW AREA x STORIES (3 MAX)] (SECTION 503.3)		NA	
UNLIMITED AREA BUILDING? (SECTION 507)		NA	
SPECIAL PROVISIONS? (SECTION 508)		NA	
ACTUAL AREA		512 SF	
CONSTRUCTION CLASSIFICATION (SECTION 602 & TABLE 601)	TYPE	TYPE VB	TYPE
FIRE-RESISTANCE RATING - BUILDING ELEMENTS (TABLE 601)	REQUIRED RATING UL LISTING		
STRUCT FRAME, INCLUDING COLS, GIRDERS & TRUSSES		0 HOUR	
BEARING WALLS, EXTERIOR		0 HOUR	
BEARING WALLS, INTERIOR		0 HOUR	
NONBEARING WALLS, EXTERIOR	PER FIRE RESISTANCE RATING – FIRE SEPARATION DISTANCE BELOW		
NONBEARING WALLS, INTERIOR			
ROOF CONST INCLUDING SUPPORT BEAMS AND JOISTS		0 HOUR	
FIRE-RESISTANCE RATING - FIRE SEPARATION DIST (TABLE 602)	REQUIRED RATING		
< 5' (PARAPET REQUIRED PER SECTION 704.11.1)		1 HOUR	
>= 5' AND < 10'		1 HOUR	
>= 10' AND < 30'		0 HOUR	
>= 30'		0 HOUR	
MEANS OF EGRESS (SECTION 1003)			
FLOOR AREA IN SQUARE FEET PER OCCUPANT (TABLE 1004.1.2)		100 GROSS	
ACTUAL FLOOR AREA		512 SF	
DESIGN OCCUPANT LOAD (SECTION 1003.2.2)		6	

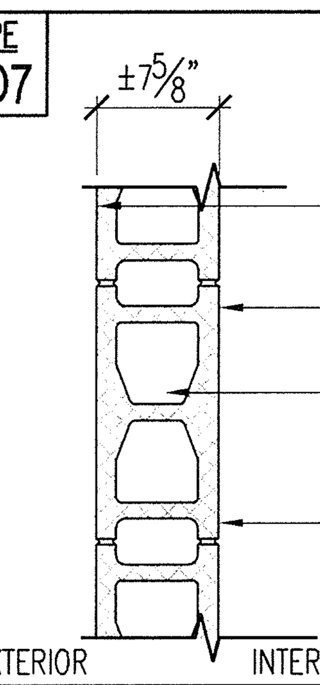
WALL TYPE GENERAL NOTES:

1. WALL TYPES DESCRIBED ON THIS SHEET DO NOT ACCOUNT FOR REQUIRED BACKING AND/OR SUPPORT FOR WALL MOUNTED FIXTURES, EQUIPMENT, CASEWORK AND/OR SYSTEMS FURNITURE. COORDINATE WITH ENLARGED FLOOR PLANS, INTERIOR ELEVATIONS AND EQUIPMENT PLANS PRIOR TO THE COVERING OF STUD FRAMING. REFER TO MANUFACTURER'S RECOMMENDATIONS.

2. WALL THICKNESSES DESCRIBED ON THIS SHEET ARE SHOWN NOMINALLY IN PLAN REPRESENTATIONS.

MASONRY WALL TYPES

TYPE MO7

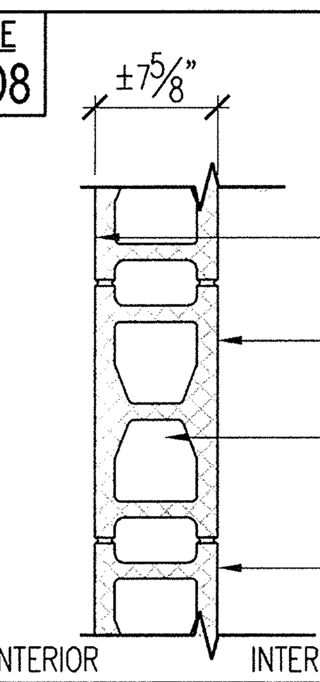


FIRE RATING NONE
FIRE TEST NONE
HEIGHT SEE BLDG & WALL SECTIONS

EXTERIOR FACE: 8" CMU (SPLIT FACE) SEE ELEVATIONS
STRUCTURE: 8" CMU (NOMINAL)
CELL INSULATION: FILL ALL NON-GROUTED CELLS W/PERLITE INSULATION
INTERIOR FACE: SMOOTH FACE W/PAINT ONLY

SHOWN 8" NOMINAL ON FLOOR PLAN

TYPE MO8



FIRE RATING NONE
FIRE TEST NONE
HEIGHT SEE BLDG & WALL SECTIONS

INTERIOR FACE: SMOOTH FACE W/PAINT ONLY
STRUCTURE: 8" CMU (NOMINAL)
CELL INSULATION: FILL ALL NON-GROUTED CELLS W/PERLITE INSULATION OR SOLID GROUT
INTERIOR FACE: SMOOTH FACE W/PAINT ONLY

SHOWN 8" NOMINAL ON FLOOR PLAN

STATE OF UTAH BOBBY PETROFF JR. 06/06/06 132536 LICENSED ARCHITECT

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SHEET TITLE
WALL TYPES AND UL LISTINGS

SHEET NUMBER
G004

BID SET

GENERAL NOTES:

1. Utah state parks and the Engineer have jurisdiction over this project. Contractor shall obtain all necessary permits and business licenses prior to construction. Permits shall include, but not be limited to water, sewer, curb & gutter, storm water and grading.
2. Contractor is responsible for dust abatement and any liability issues related to dust at any location which may be caused by this project.
3. The Contractor is responsible for traffic control and protection of pedestrians in and around this work. Reference the manual on uniform traffic control devices (MUTCD latest edition for work zone traffic control). Warning and/or danger signs shall be required. Such flagmen or personnel as is necessary shall be readily available, especially when loaded or unloaded trucks- equipment are ingressing or egressing onto the job site. The contractor shall use the suggested traffic control plan, if included in plans, or submit a plan of his/her own for approval by the Engineer and/or the Owner and other regulator agencies.
4. Any work done within a public right-of-way shall be coordinated with the appropriate transportation agency and shall meet the requirements of that agency and, in particular, requirements of any right-of-way special use permit, or other permit. All work shall meet current OSHA requirements.
5. Where work is performed on easements, the contractor shall take every precaution to eliminate any adverse effects on the adjacent property and/or to restore it to its original condition.
6. All distances and data shall be checked by the contractor prior to the start of construction. In case of conflict the engineer shall be notified immediately so that clarification may be made prior to the start of the work.
7. The contractor shall be responsible for disposal and fees of all materials removed or demolished on site.
8. The Contractor shall arrange for, secure and pay for directly, any and all temporary utility supplies it may require for prosecution of its work. The cost of such utilities shall be included in the appropriate bid item with which it is associated.
9. Should construction be halted because of inclement weather conditions, the Contractor will completely clean up all areas and maintain the surface in good condition during the shut-down period. No excavation in paved streets will be allowed if weather conditions do not permit repaving of the pipeline trench.
10. The Contractor's personnel, equipment, and operations shall comply fully with all applicable standards, regulations, and requirements of existing Federal, Utah State, and Local governmental agencies.
11. No person shall be cut off from access to his residence or place of business for a period exceeding eight (8) hours, unless the Contractor has made special arrangements with the affected persons prior to commencing work in the area.
12. The Contractor shall preserve existing City, County, State, and Federal land monuments whenever possible. If a monument must be moved the engineer shall be contacted 2 weeks prior to removal to arrange for relocation.
13. The Contractor shall be responsible for obtaining all local, State, and Federal permits required for stormwater pollution prevention as a result of construction activities. When called for in the Contract Documents, the Contractor shall prepare a Stormwater Pollution Prevention Plan for approval by the Engineer. If the construction will disturb more than one acre, the Contractor shall obtain a copy of the U.S. Environmental Protection Agency's NPDES General Permit for Storm Water Discharges Associated with Construction Activity (otherwise known as the Construction General Permit or CGP) and submit a "Notice of Intent" (NOI)[EPA Form 3510-9 (6/03)] for permit coverage under the General Permit. The CGP may be found on the Internet at <http://www.epa.gov/npdes/stormwater/cgp> or by contacting the U.S. EPA Office of Water directly at (800) 424-4372. The NOI may be filed electronically at the following website: <http://cfpub.epa.gov/npdes/stormwater/enoi.cfm>. The CGP does not relieve the Contractor from compliance with other regulations or contract requirements regarding stormwater pollution prevention including but not limited to: protection of surface waters, prevention of soil runoff into drains, dust control, prevention of tracking soils to adjacent streets, fuel containment, spill control, etc.

EXISTING UTILITES

1. Approximate locations of utilities are shown on the plans. They are to be used for general information only. It is the responsibility of the contractor to notify the appropriate utility companies when construction might interfere with normal operation of any utilities. It shall also be the contractor's responsibility to have the appropriate utility company field-locate any utility installations which might be affected by construction prior to beginning work in that area. The contractor shall be responsible for maintaining service of existing utilities and for restoring any utilities damaged due to construction at no additional cost to the owner. Depths and elevations of utilities are unknown unless otherwise shown. Contractor shall field verify utility depths, elevations, any discrepancies and/or conflicts shall be brought to the attention of the Engineer immediately.

INSPECTIONS AND TESTING

1. The Owner shall be responsible for all materials testing including but not limited to concrete, asphalt, compaction, sewer and water. All tests shall meet minimum Engineer requirements. See the contract documents and drawings for frequency of testing. Results are to be delivered to Special Inspector, Owner and Architect.
2. Pressure, deflection and other tests relating to pipeline installation shall be paid for and performed by the Contractor.
3. The Contractor is responsible to coordinate with Architect and Special Inspector for inspections of work at appropriate intervals. It shall be the Contractor's responsibility to pay for additional inspections that are the result of his workmanship.

TRENCH EXCAVATION AND BACKFILL

1. Barriers shall be placed at each end of all excavations and at such places as may be necessary along excavations to warn all pedestrians and vehicular traffic of such excavations. Lights shall also be placed along excavations from one hour before sunset each day to one hour after sunrise of the next day until such excavations are entirely refilled, compacted, and surfaced or final graded. All excavations shall be barricaded in such a manner as to prevent persons from falling, walking, or otherwise entering any excavation in any street, roadway, parking lot, treatment plant or any other area, public or private.
2. Excavations shall be sheeted, braced, and shored as required to support the walls of the excavations, to eliminate sliding and settling and as may be required to protect the workmen, the work in progress, and existing utilities, structures and improvements. All such sheeting, bracing, and shoring shall comply with the requirements of the Utah State Industrial Commission, Occupational Safety and Health Act (OSHA), and accident prevention and safety provisions of the contract.
3. All trenches shall be kept free from water during excavation, fine grading, pipe laying and jointing, and pipe embedment operations.
4. No sanitary sewer shall be used for disposal of trench water. Surface water shall be prevented from entering trenches.
5. All backfill and compaction shall be completed within a maximum distance of 200 feet behind the end of newly installed pipe.
6. Excavation shall be not more that 200 feet ahead of the newly installed pipe. The Contractor shall restore the asphalt surface where the storm drain crosses existing asphalt.
7. The minimum clear trench width at the horizontal diameter of the pipe must not be less than the outside diameter of the pipe plus twelve-inches (12").
8. Gradation. Imported granular material shall conform to the following gradation specifications:

Granular Foundation Material:

One hundred percent passing a one-inch screen and five percent passing a one/half-inch screen.

Granular Bedding Material:

Ductile iron or concrete pipe - One hundred percent (100%) passing a one-inch screen and five percent passing a No. 4 sieve.

PVC pipe - One hundred percent passing a three/quarter-inch screen and five percent passing a No. 4 sieve.

Copper tubing/PE pipe - One hundred percent passing a No. 4 sieve and eight percent passing a No. 200 sieve.

Granular Backfill material:

One hundred percent passing a three-inch square sieve and fifteen percent passing a 200 mesh sieve.

9. Under pavements or other surface improvements the in-place density shall be a minimum of ninety-five percent (95%) of laboratory standard maximum dry density as determined by AASHTO T-99. In shoulders and other areas the in-place density shall be a minimum of ninety percent (90%) of the maximum dry density as determined by AASHTO T-99. The backfill in the trenches shall be either compacted or consolidated according to the requirements of the materials being placed.
10. Where compaction methods are used, the material shall be placed at a moisture content and un-compacted lift thickness such that after compaction the required relative densities will be produced. In no event will the material be placed in lifts which, prior to compaction, exceed eight inches (8").

PIPE-GENERAL

1. All pipe lines are to be located as shown on the plans unless relocated in the field by the Engineer to avoid unforeseen utility interference.
2. Minimum clearance between new pipelines and existing utilities and structures (except sewers) shall be three feet horizontally.
3. Contractor shall provide all necessary fittings, hardware, labor, etc. To construct vertical and horizontal bends in pipe as needed to meet the required grade, alignment, and cover requirements.
4. For connections to existing sewer lines, contractor shall field verify all pipe diameters, pipe materials, and appurtances for confirmation of the required fittings prior to ordering fittings.
5. Dimensions to pipelines are to centerline unless otherwise noted.
6. Distances shown along pipelines are horizontal distances and not pipe length.
7. Wherever the subgrade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, or where groundwater must be drained, the subgrade shall be excavated to such depth as may be necessary and replaced with Gravel Foundation Material.
8. All pipe shall be protected from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations by being adequately bedded.
9. Where applicable, bell holes shall be excavated so that only the barrel of the pipe receives bearing from the trench bottom.
10. In the event trench materials are not satisfactory for pipe bedding, modified bedding will be required. Modified bedding shall consist of placing compacted granular material on each side of and to the level of twelve-inches (12") above the top of the pipe.

PIPE FITTINGS

1. All pipe fittings shall conform to AWWA standards.
2. All buried valves shall be installed complete with two-piece, cast iron, screw type, 5-1/4-inch shaft valve box with lid. The lid shall have the word "Water" cast in the metal.
3. All valve boxes in paved areas shall contain a concrete 6" thick concrete collar 24 inches larger in diameter than the valve box.

PRESSURE PIPE

1. Contractor shall coordinate all live taps and any other work on or manipulation of the existing water system with the engineer and city. Coordinate connections to the water system with Larry Gray, Bear Lake State Park (435) 946-3343.
2. Minimum depth of cover for culinary water lines unless otherwise shown on the plans shall be five (5) feet.
3. All pipe shall include a 3-inch magnetic locator tape installed in the pipeline trench approximately 12-inches below the ground surface. Identification tape shall be furnished with white or black printing on an approved colored field having the words:

CAUTION: UTILITY DESCRIPTION - BELOW.

4. All gate valves shall be located near to tees or crosses and their associated reducers as shown on the project plans.
5. Thrust blocking shall be applied at all tees, valves, plugs, caps and at bends deflecting 11 1/4 degrees or more. The fitting shall be encased in a protective plastic wrap before the thrust block is poured. Reaction blocking shall be concrete having a compressive strength of not less than 3000 pounds per square inch at 28 days. Blocking shall be placed between undisturbed soil and the fitting to be anchored. The area of bearing on the pipe and on the ground shall be as shown in the Drawings. The blocking shall be so placed that the pipe and the fittings will be accessible for repair.
6. There shall be 10 feet minimum of horizontal separation distance between all new water lines and new sewer lines. Exceptions occur where service lines are installed in a common trench and at crossings. Building water and sewer services may be installed in the same trench if it is placed on a solid shelf excavated at one side of the common trench. A minimum of 12 inches of vertical separation shall be maintained at all locations. Joints in water pipe should be 10 feet from crossings with sewer. Sewer within 10 feet of such crossings shall be mechanical joint cast iron or equal.
7. All crosses and tees shall be installed with the branches having the size of the largest intersecting pipe unless otherwise shown. The connections to smaller lines shall then be made by means of reducers from the tee or cross, unless otherwise shown on plans.
8. All air release and combination air valves shall be installed at the crest of the vertical curvature of the water line. Contractor shall record actual field stationing on record drawings.
9. All pipe shall be pressure tested as required in the specifications.
10. Culinary water lines shall be disinfected per AWWA C651.
11. Frost free hydrants shall comply with ASSE 1057 with a ASSE 1011 back flow prevention device. Bury depth should match the depth of the culinary water line.
12. Curb Valves to comply wtih AWWA C800 With drain hole.
13. 2" water pipe to be Polyethelene Copper Tube Size (CTS) per AWWA C901 with a pressure rating of 200 PSI.
14. Water service connections shall be compression time with Stainless Steel inserts. Approved manufacturers - Mueller, Ford or equal.

GRAVITY PIPE

1. Minimum depth of cover for sewer lines unless otherwise shown on the plans shall be four (4) feet.
2. All concrete pipe shall be installed accurately to the defined line and grade shown on the plans. Pipe shall be laid in a straight horizontal and vertical line between manholes or junction boxes.
3. Gravity pipe lines shall be tested per the specifications.

MISCELLENEOUS UTILITES

1. All utility conduits shall be schedule 40 with long sweeps.
2. All utilities shall be buried a minimum of 36 inches below finished grade
3. All phone and communication lines to be placed in conduit under paved surfaces unless noted on the plans
4. Direct bury telephone and communication lines shall be surrounded by 6 inches of sand.
5. A minimum clearance of 24 inches shall be maintained between power conduits and other communication utilities.
6. Install a pull string with a 800 # capacity in all blank conduits.

EARTHWORK

1. The material shall be deposited in horizontal layers having a thickness of not more than eight inches prior to being compacted as hereinafter specified;
2. The moisture of compacted material shall be controlled at two percent plus or minus of the optimum moisture as determined by AASHTO T-99.
3. When the material has been conditioned as hereinbefore specified, the backfill or embankment shall be compacted as follows:
(a) Under roadways and extending one foot beyond the proposed back of walk, the fill or embankment material shall be compacted to a density equal to not less than 96% of maximum dry density as measured by AASHTO T-99.
(b) Under sidewalks and drive approaches the fill or embankment material (to at least one foot each side of the edge of the slab) shall be compacted to a density equal to not less than 96% of maximum dry density, as measured by AASHTO T-99.
(c) Other fills and embankments not listed above shall be compacted to a density equal to not less than 90% of maximum dry density, as measured by AASHTO T-99.

CONCRETE

1. All concrete required on this project shall be as noted in section 3300 of the project specification or other mix design approved by engineer.
2. Portland cement shall be Type II and shall comply with the Standard Specification for Portland Cement, ASTM C-150.
3. Deformed Billet-Steel Bars for Concrete Reinforcement (Grade 40 or Grade 60) - ASTM Designation A-615.
4. All bars shall be of the size specified and shall be placed in the positions shown on the Drawings in such a manner as to be firmly held during the placing of the concrete. Where not otherwise indicated, minimum clearance and cover as required by the ACI 318 Code, latest edition.
5. Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete.
6. All edges that will be exposed to view when the structure is completed shall be chamfered by placing molding in the forms, unless finishing with molding tools.

CONCRETE FINISH

1. All exposed vertical exposed surfaces shall receive a sack rubbed finish.
2. All non-exposed vertical exposed surfaces shall have ties and forming devices removed and remaining holes packed with a cement mortar mix.
3. All exposed horizontal surfaces on the concrete shall be accurately screeded to grade, floated, then broom finished, unless specified otherwise.
4. Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.
5. Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40 degrees unless facilities are provided to prevent the concrete from freezing. The use of accelerators or antifreeze compounds will not be allowed.

SURFACE IMPROVEMENTS

1. The contractor shall retain and protect or remove and replace all landscaping, trees, utilities, ditches, culverts, fences, mailboxes, signs, lightpoles, headgates, existing concrete sidewalks, approaches, curb & gutter and other miscellaneous items. Any damage done by the contractor shall be repaired at his expense.
2. Construction of curb, gutter and sidewalk shall follow installation of storm drain/utilities improvement. Preparation of the area to be paved shall follow completion of the curb, gutter and sidewalk.
3. Sidewalk, curb and gutter, and concrete driveways shall be saw-cut vertically along the lines forming the mainline trench, in such a manner as to not cause damage to adjoining improvements.
4. Materials used for repair or replacement of surface improvements shall be equal to or better than the material removed.
5. Where trenches are in or cross surfaced roads, traffic lanes, driveways, or parking areas, the surface shall be removed, maintained, and restored to original condition or better.
6. All edges of trenches in paved areas shall be sawcut a minimum of 6 inches wider than the width disturbed by the trench excavation prior to placing asphalt patch.
7. Stockpiled topsoil shall be placed over areas disturbed by construction activities.
8. The Contractor shall grade the site to the finished contours shown on the Drawings. The Contractor shall run a track dozer or loader up and down the slopes to create longitudinal depressions in the finished surface to resist erosion and assist seed germination.
9. On sloping hillsides, contractor shall take precautions to mitigate possible erosion problems in the trench from storm water that might occur during or after construction.
10. The Contractor shall revegetate the areas on which topsoil has been placed.

PAVEMENT CONSTRUCTION

1. The Contractor is responsible for the disposal of paving material to be removed from the site. The Contractor shall be responsible to obtain a site permit and any permits or other approvals necessary for disposal of the excess material.
2. The granular material shall be placed and compacted to not less than 96% maximum dry density as determined by AASHTO T-99.
3. The finished compacted pavement shall have a density of 91% minimum, (no test less than 91% of the density determined in accordance with ASTM D-2041), as determined by ASTM D2170.
4. The contractor is to sawcut asphalt edges immediately prior to paving or patching.

SIGNING

1. All signing to be per UDOT Specification Section 2891
2. Sign panels to be reflective sheeting on aluminum.
3. Legend to be reflective also.
4. Post to be 2" perforated 12 gauage steel.
5. Install per detail on drawings.

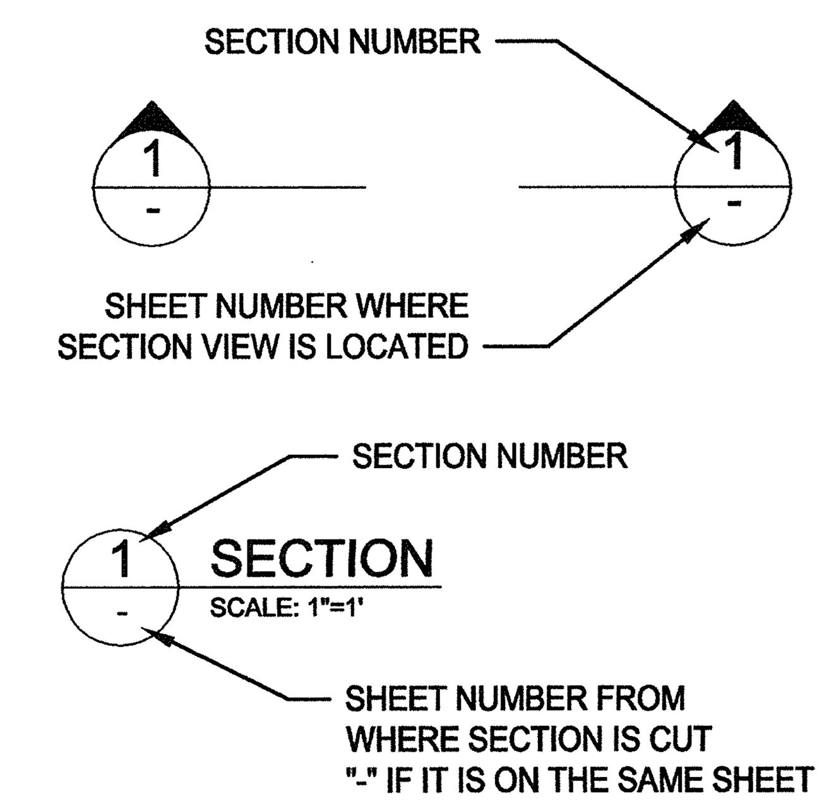
PAVEMENT MARKINGS

1. Traffic paint to be acrylic latex for uncured paving (7 days old) and alkyd or chlorinated rubber for cured paving. (3 months old)
2. Apply at 180 sq. ft. / gallon for 2 coats.

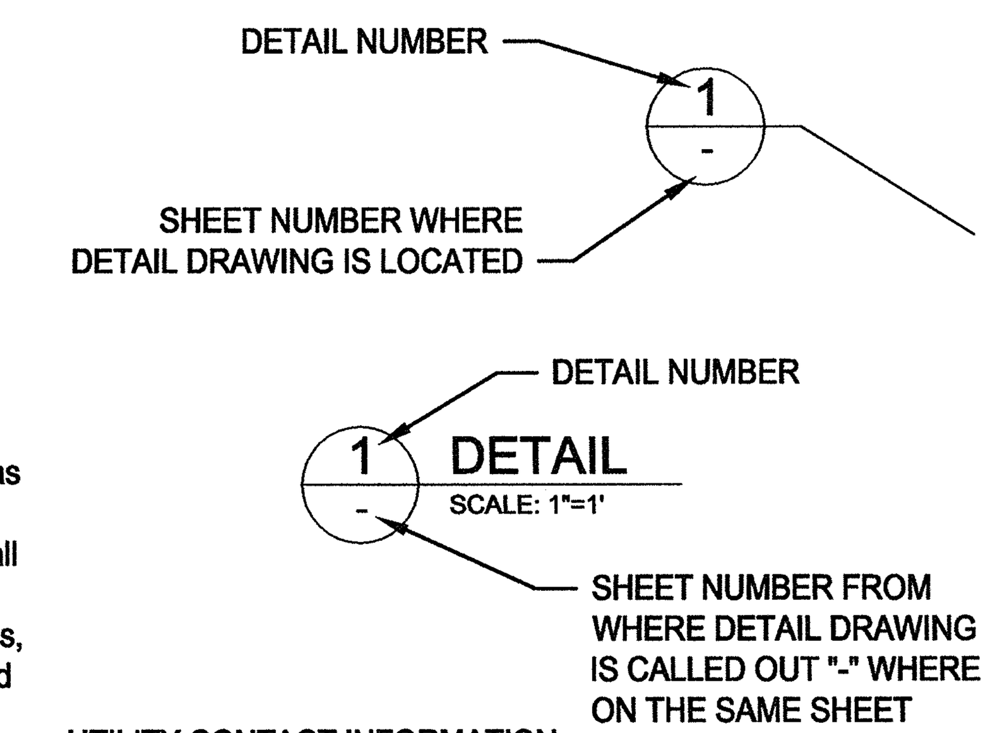
SECTION AND DETAIL IDENTIFIERS

NOTE:
A DASH MAY BE PLACED IN THE LOWER PORTION OF THE IDENTIFIER IF THE DETAIL DRAWING OR SECTION VIEW IS LOCATED ON THE SAME SHEET.

SECTION IDENTIFICATION



DETAIL IDENTIFICATION



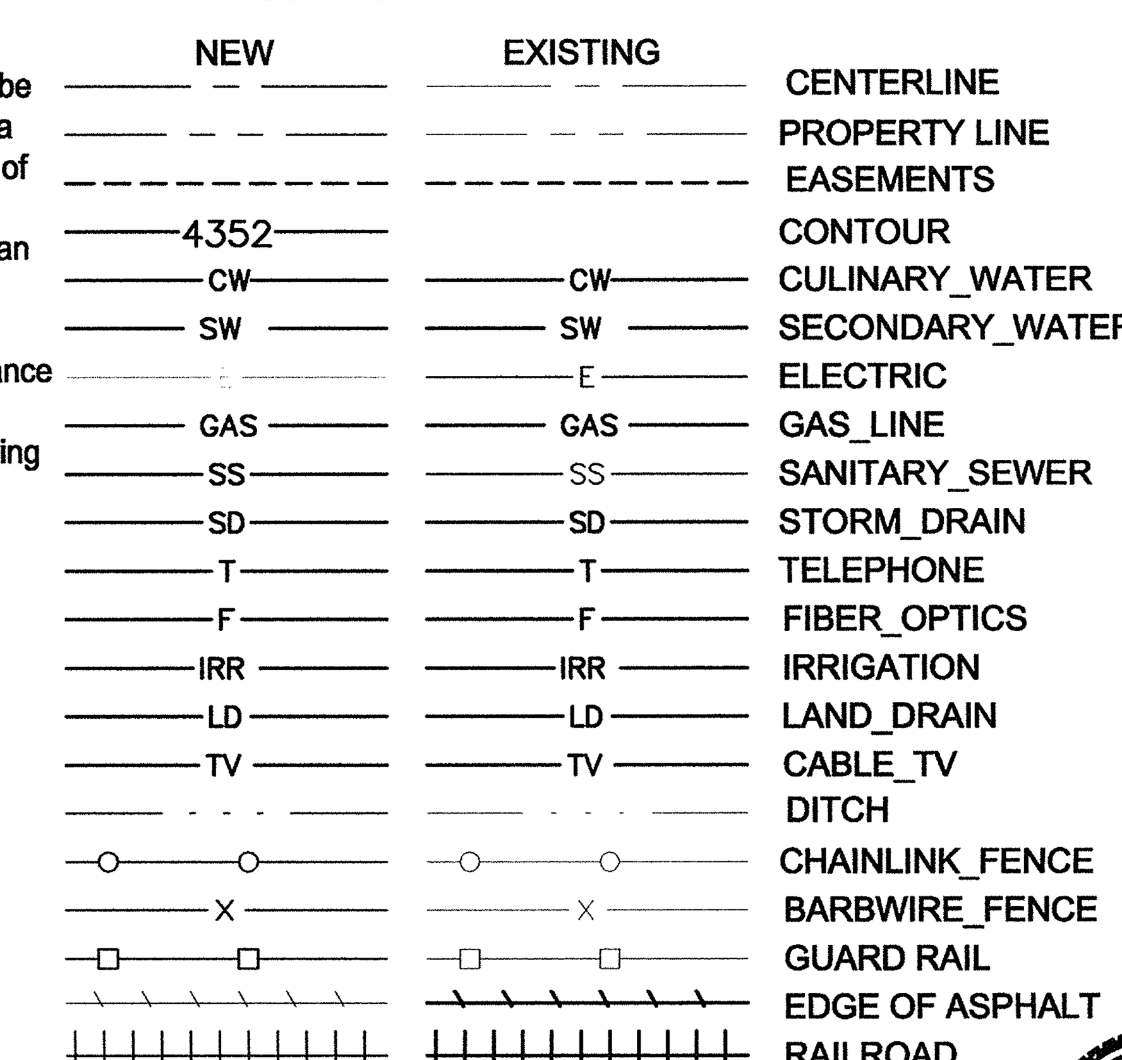
UTILITY CONTACT INFORMATION

Hyrum City Water
Cory Nielsen (435) 757-4277

Hyrum City Sewer
Kevin Maughan (435) 881-0562

Hyrum State Park
Lee Gyllenskog (435) 245-6866

LINE LEGEND



REGISTERED PROFESSIONAL ENGINEER
#353914-2202
ZAN P. MURRAY
6/21/06
STATE OF UTAH

State of Utah
Department of Administrative Services

Division of Facilities
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CREATED BY: DFCM

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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

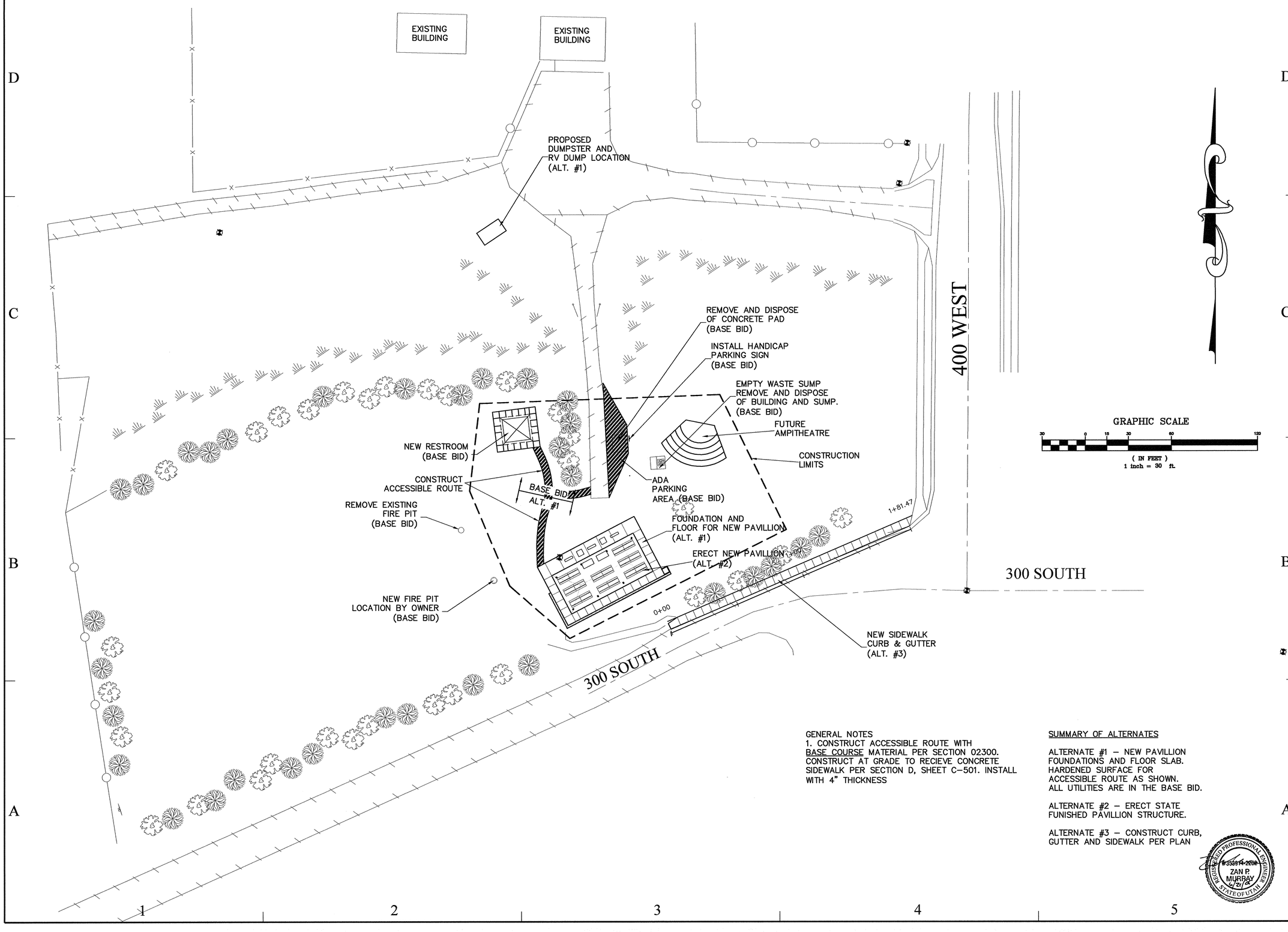
DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE

CIVIL NOTES

SHEET NUMBER

C100



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GENERAL NOTES
1. CONSTRUCT ACCESSIBLE ROUTE WITH BASE COURSE MATERIAL PER SECTION 02300. CONSTRUCT AT GRADE TO RECIEVE CONCRETE SIDEWALK PER SECTION D, SHEET C-501. INSTALL WITH 4" THICKNESS

SUMMARY OF ALTERNATES

ALTERNATE #1 – NEW PAVILLION FOUNDATIONS AND FLOOR SLAB. HARDENED SURFACE FOR ACCESSIBLE ROUTE AS SHOWN. ALL UTILITIES ARE IN THE BASE BID.

ALTERNATE #2 – ERECT STATE FUNISHED PAVILLION STRUCTURE.

ALTERNATE #3 – CONSTRUCT CURB, GUTTER AND SIDEWALK PER PLAN

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ZAN P. MURRAY
6/21/06

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SHEET TITLE

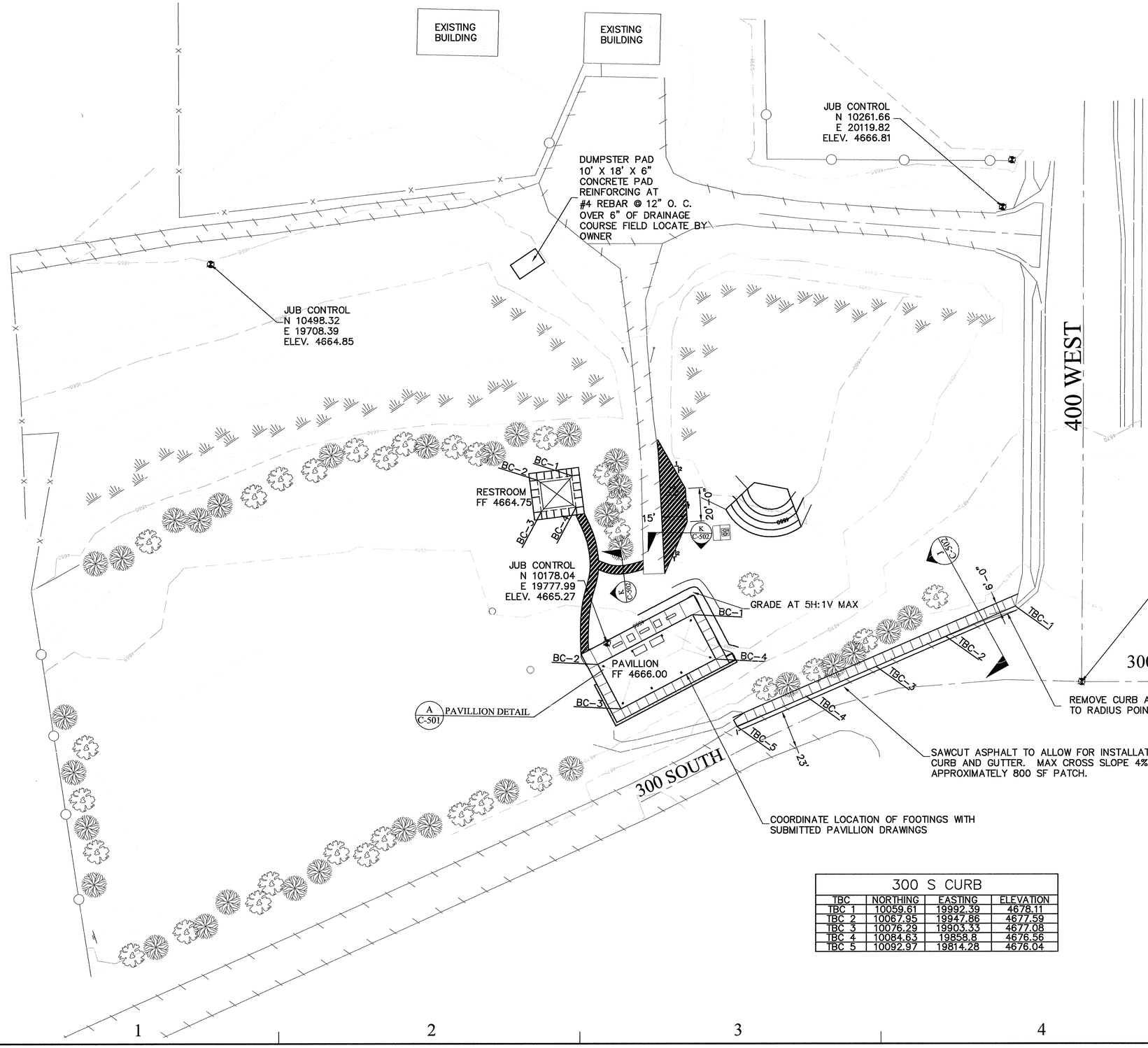
SITE PLAN

SHEET NUMBER

C101

SHEET 6 OF 31

GENERAL NOTES:
RESTORE ALL DISTRUBED ARES WITH TURF SOD.



300 S CURB			
TBC	NORTHING	EASTING	ELEVATION
TBC 1	10059.61	19992.39	4678.11
TBC 2	10067.95	19947.86	4677.59
TBC 3	10076.29	19903.33	4677.08
TBC 4	10084.63	19858.8	4676.56
TBC 5	10092.97	19814.28	4676.04

PAVILLION		
CORNER	NORTHING	EASTING
BC-1	10163.38	19829.72
BC-2	10170.45	19766.11
BC-3	10140.63	19762.80
BC-4	10133.56	19826.41

RESTROOM BUILDING		
CORNER	NORTHING	EASTING
BC-1	10272.60	19816.48
BC-2	10282.07	19797.74
BC-3	10265.12	19789.17
BC-4	10255.65	19807.91

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SHEET TITLE

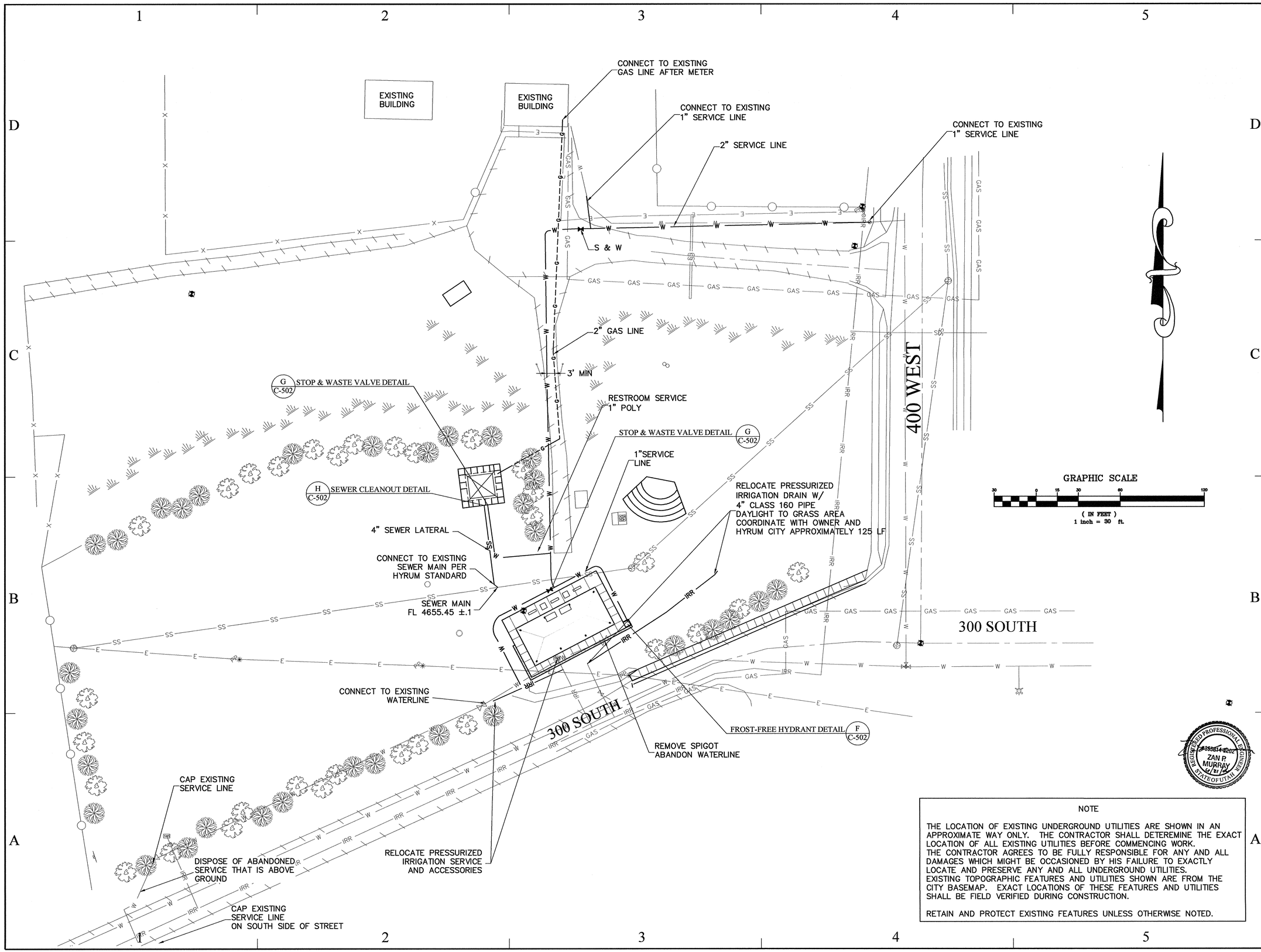
GRADING PLAN

SHEET NUMBER

C102

REGISTERED PROFESSIONAL ENGINEER
STATE OF UTAH
ZAN P. MURRAY
#353944-2202

SHEET 7 OF 31



NOTE

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETEREMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. EXISTING TOPOGRAPHIC FEATURES AND UTILITIES SHOWN ARE FROM THE CITY BASEMAP. EXACT LOCATIONS OF THESE FEATURES AND UTILITIES SHALL BE FIELD VERIFIED DURING CONSTRUCTION.

RETAIN AND PROTECT EXISTING FEATURES UNLESS OTHERWISE NOTED.

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DRAWN BY: MJW
CHK'D BY: ZPM

REGISTERED PROFESSIONAL ENGINEER #350814-2202 ZAN P. MURRAY STATE OF UTAH

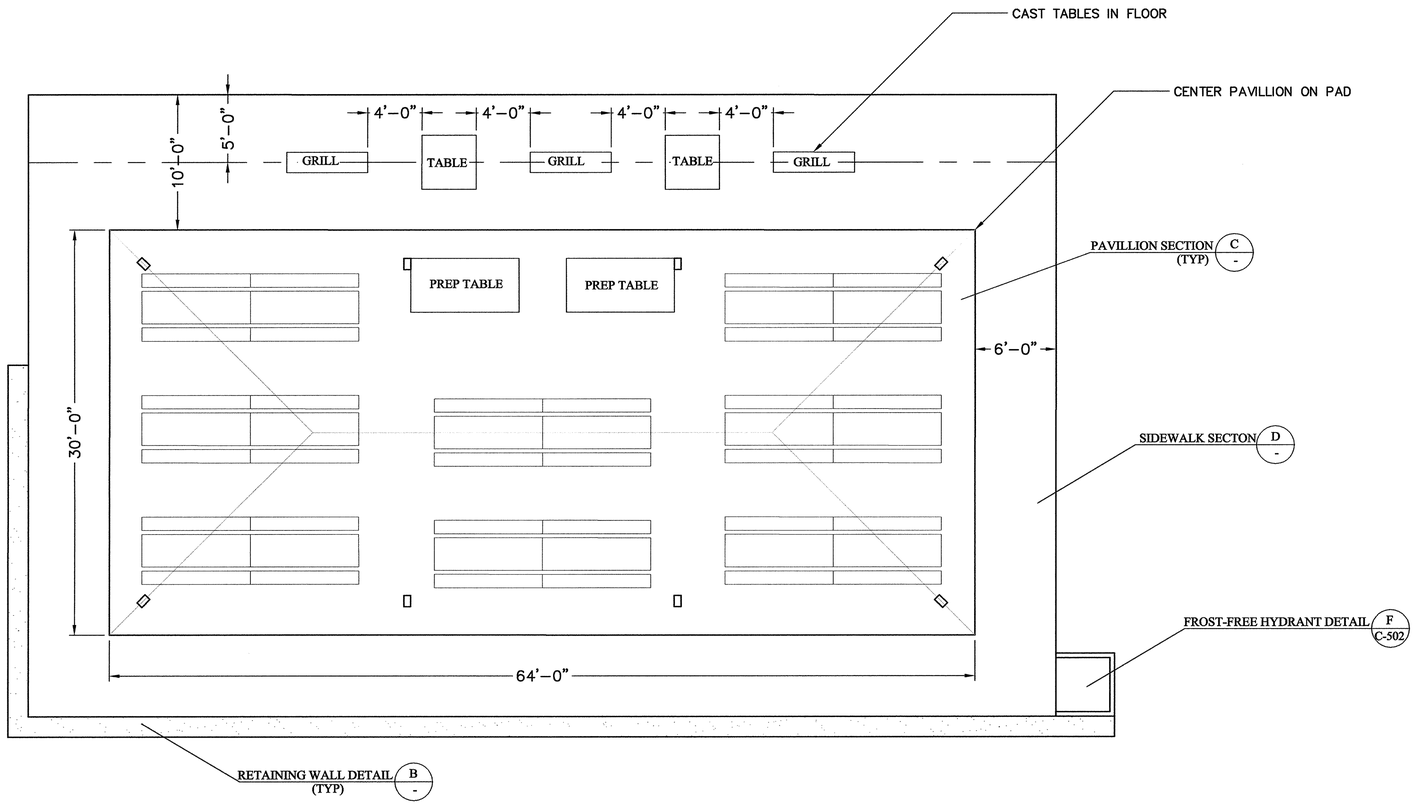
SHEET TITLE

UTILITY PLAN

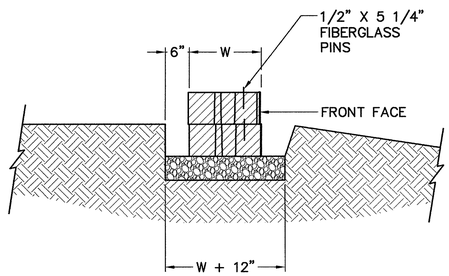
SHEET NUMBER

C103

SHEET 8 OF 31

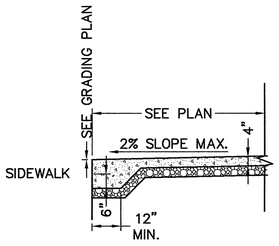


PAVILLION DETAIL A
SCALE: NTS



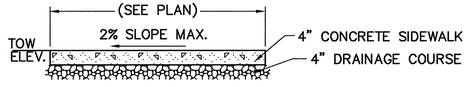
NOTE:
1. THE LEVELING PAD IS TO BE CONSTRUCTED OF CRUSHED STONE OR 2000 PSI ± UNREINFORCED CONCRETE.

B - RETAINING WALL DETAIL
SCALE: NTS



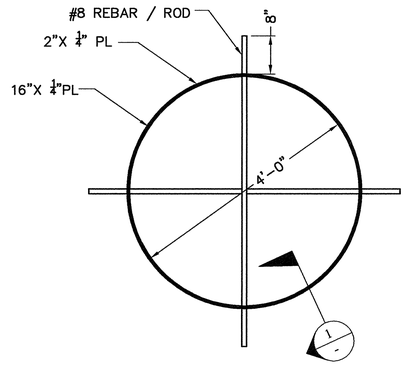
NOTE:
INSTALL SCRIBE IN CONCRETE 1/4 OF CONCRETE THICKNESS AT A SPACING OF 12 TIMES THE SIDEWALK THICKNESS. PLACE EXPANSION JOINT AT 24' ON CENTER WITH ½" EXPANSION BOARD.INSTALL POLYURETHANE JOINT SEALANT OVER EXPANSION JOINT.

PAVILLION SECTION C
SCALE: NTS

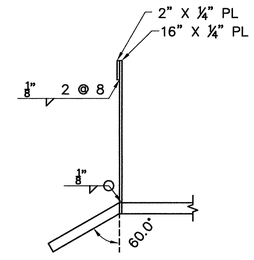


NOTE:
INSTALL SCRIBE IN CONCRETE 1/4 OF CONCRETE THICKNESS AT A SPACING OF 12 TIMES THE SIDE-WALK THICKNESS. PLACE EXPANSION JOINT AT 24' ON CENTER WITH ½" EXPANSION BOARD. INSTALL POLYURETHANE JOINT SEALANT OVER EXPANSION JOINT.

SIDEWALK SECTION D
SCALE: NTS



PLAN VIEW



SECTION 1

FIREPIT DETAILS E
SCALE: NTS

NOTE: NO FINISH REQUIRED ON FIREPIT STEEL

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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM
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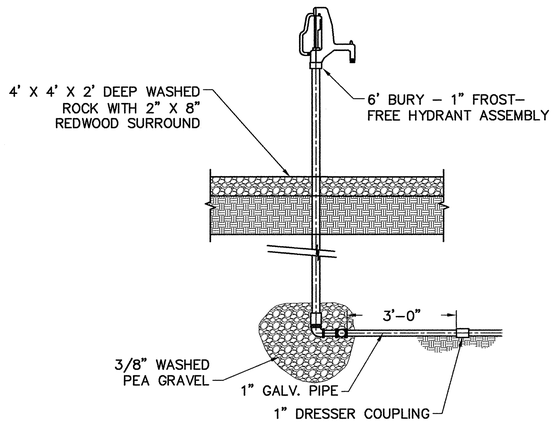
SHEET TITLE

CIVIL DETAILS

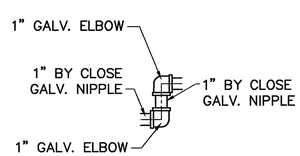
SHEET NUMBER

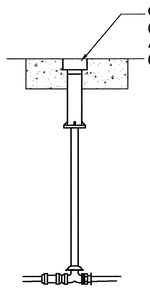
C501

SHEET 9 OF 31

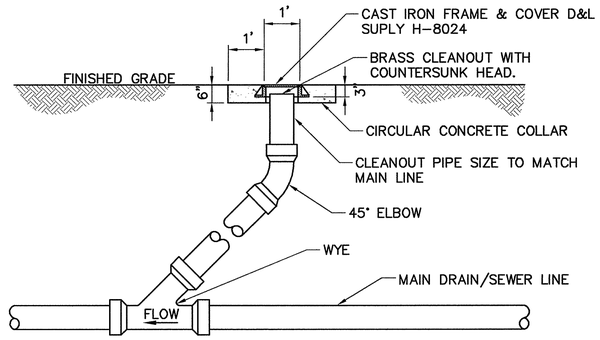


FROST-FREE HYDRANT DETAIL F
SCALE: NTS -

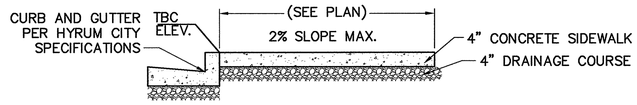




STOP & WASTE VALVE G
SCALE: NTS -

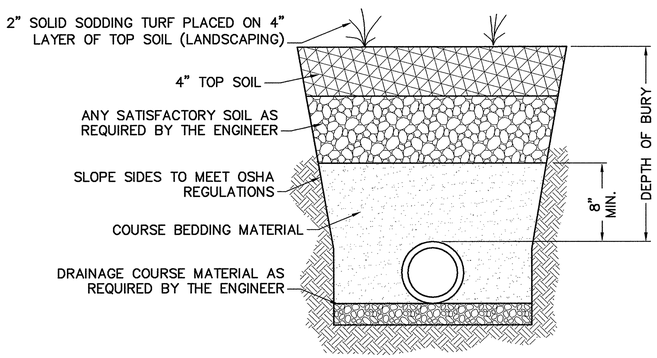


SEWER CLEANOUT DETAIL H
SCALE: NTS -

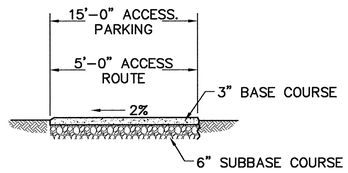


NOTE:
INSTALL SCRIBE IN CONCRETE 1/4 OF CONCRETE THICKNESS AT A SPACING OF 12 TIMES THE SIDE–WALK THICKNESS. PLACE EXPANSION JOINT AT 24' ON CENTER WITH $\frac{1}{2}$" EXPANSION BOARD. INSTALL POLYURETHANE JOINT SEALANT OVER EXPANSION JOINT.

SIDEWALK SECTION J
SCALE: NTS -

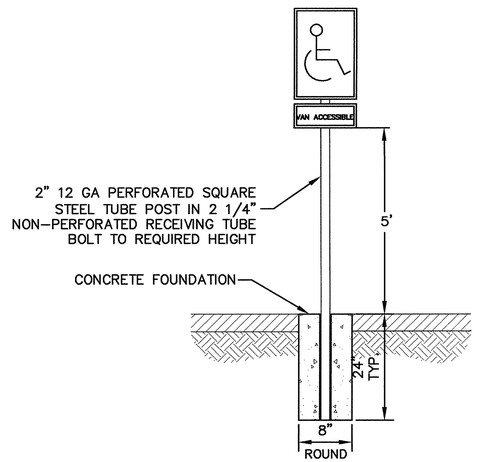


TRENCH SECTION (TURF) I
SCALE: NTS -



NOTE:
MAXIMUM OBSTACLE HEIGHT ABOVE SURFACE IS 1". THIS MAY OCCUR AT SURFACE MATERIAL CHANGES TO CONCRETE.

ACCESSIBLE PATH SECTION K
SCALE: NTS -



HANDICAP PARKING SIGN L
SCALE: NTS -

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ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
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CAD DWG FILE:
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SHEET TITLE
CIVIL DETAILS

SHEET NUMBER
C502

SHEET 10 OF 31

REGISTERED PROFESSIONAL ENGINEER
#353914-2202
ZAN P. MURRAY
6/27/06
STATE OF UTAH

ROOM FINISH SCHEDULE

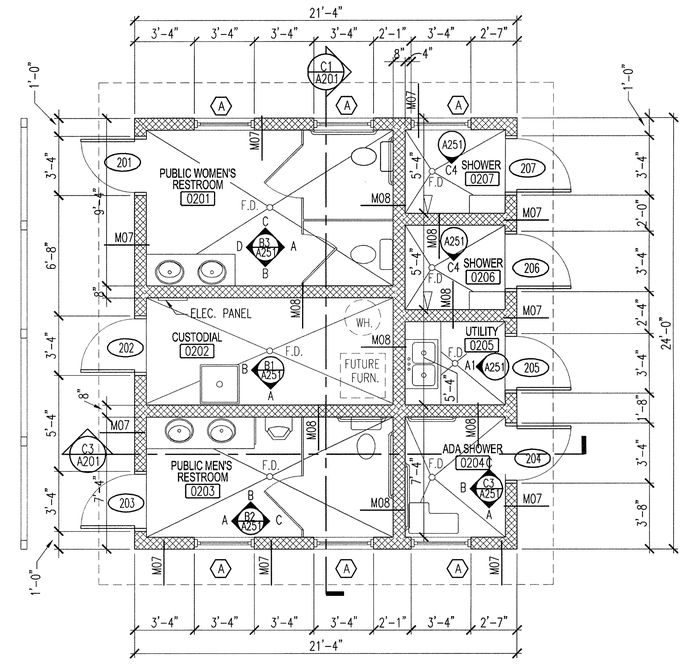
NUMBER	NAME		FLOOR	BASE	WALLS N	WALLS E	WALLS S	WALLS W	CEILING TYPE	CEILING HEIGHT	NOTES	NUMBER
0201	PUBLIC WOMEN'S	RESTROOM	2	2	A	A	A	A	1	8'-0"	-	0201
0202		CUSTODIAL	2	2	A	A	A	A	1	8'-0"	-	0202
0203	PUBLIC MEN'S	RESTROOM	2	2	A	A	A	A	1	8'-0"	-	0203
0204		ADA SHOWER	2	-	A	A	A	A	1	8'-0"	-	0204
0205		UTILITY	2	2	A	A	A	A	1	8'-0"	-	0205
0206		SHOWER	2	-	A	A	A	A	1	8'-0"	-	0206
0207		SHOWER	2	-	A	A	A	A	1	8'-0"	-	0207

COLOR SCHEDULE

EXTERIOR COLOR		INTERIOR COLOR	
ITEM	COLOR	ITEM	COLOR
ROOFING MATERIAL	SEE SPECIFICATIONS		
FLASHINGS	WHITE	MAIN PAINT COLOR	BOTANY BEIGE 822 1W
SOFFIT	WHITE	BASE CABINET	LAMINATE - WILSONART BURNISHED CHESTNUT 4796-60
WINDOWS	WHITE	COUNTER TOP	LAMINATE - NEVAMAR CANYON FISSURE FS 2001T
CMU (EXTERIOR)	SHALE (SPLIT FACE)		
CEMENT FIBER BOARD	SEE SPECIFICATIONS & DRAWINGS		

FINISH SCHEDUAL LEGEND						
	FLOOR	BASE	WALLS/WAINSCOT		CEILING	
1		-	A	EPOXY PAINTED CMU	1	TEXTURED PAINTED GYPSUM BOARD
2	SEALED CONCRETE	RUBBER BASE				

PRIVACY SCREEN C1 A501



N

PLAN NORTH
SEE SITE PLAN

1 A101b **RESTROOM FLOOR PLAN**
SCALE: 1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES:

1. DIMENSIONS ARE TO THE FACE OF EXISTING FINISH, NEW SUBSTRATE OR GRIDLINE.
2. FIELD VERIFY ALL EXISTING CONDITIONS AND THEIR COMPATIBILITY WITH NEW CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. COORDINATE DISCREPANCIES WITH ARCHITECT.
3. DO NOT SCALE DRAWINGS.
4. SEE CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.
5. SEE G SERIES SHEETS FOR WALL TYPES AND TYPICAL ACCESSIBILITY CLEARANCE AND COMPLIANCE REQUIREMENTS.
6. SEE SHEET A6.1 FOR WINDOW TYPES.
7. PAPER TOWEL DISPENSERS, SOAP DISPENSERS AND TOILET PAPER DISPENSERS ARE SUPPLIED AND INSTALLED BY OWNER.

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MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS.

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE

FLOOR PLAN

SHEET NUMBER

A101

SHEET 11 OF 31

BID SET

STATE OF UTAH
ROBERT PETROFF, JR.
06/16/06
#32536
LICENSED ARCHITECT

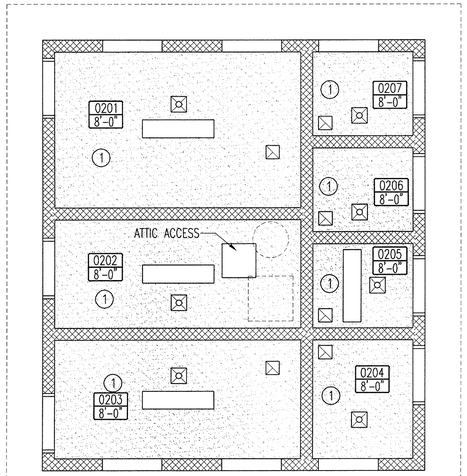
REFLECTED CEILING PLAN GENERAL NOTES:

1. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL LIGHTING AND DIFFUSER INFORMATION.

2. CEILING HEIGHT SHOWN IN ROOM TAG INDICATES HEIGHT OF DOMINANT CEILING FINISH. SEE NOTES FOR ADDITIONAL CEILING FINISH INFORMATION.

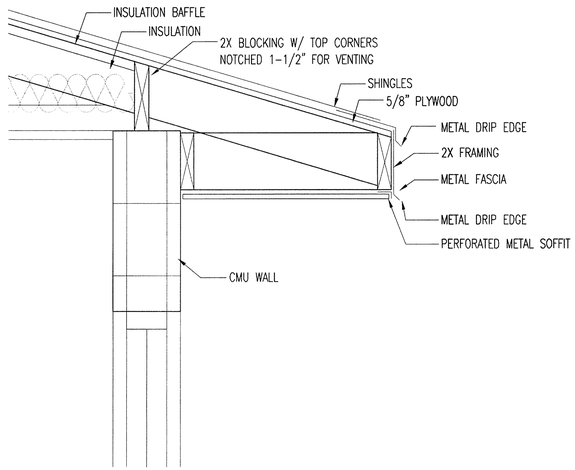
REFLECTED CEILING PLAN KEY NOTES: (#)

1. TEXTURED GYPSUM BOARD ATTACHED TO BOTTOM OF FRAMING (PAINTED).



N

FREE STANDING RESTROOMS REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



A / A151 SOFFIT AND FASCIA DETAIL
SCALE: 1-1/2" = 1'-0"

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ISSUE DATE: JUNE, 2006

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CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE

REFLECTED CEILING

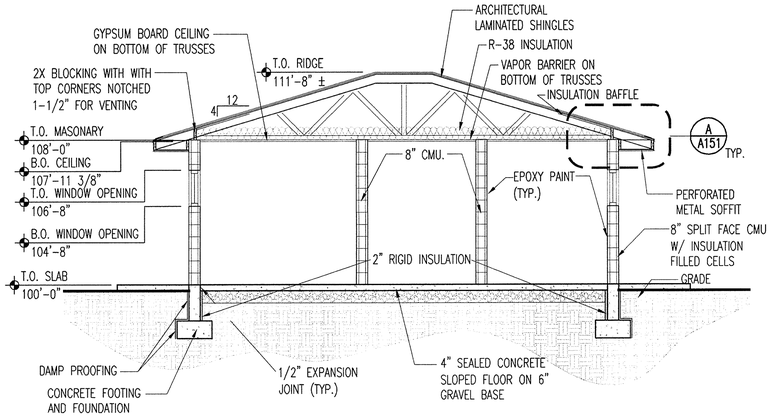
SHEET NUMBER

A151

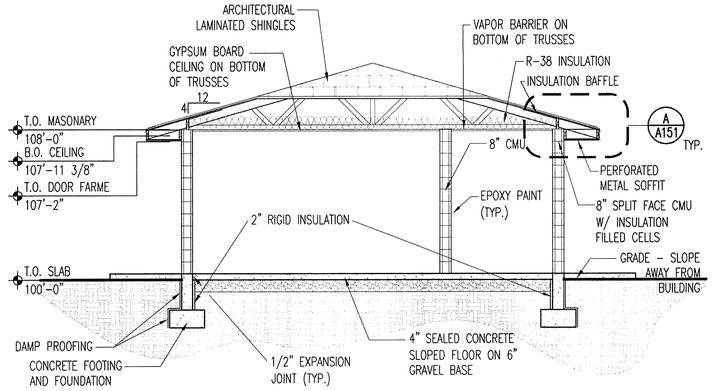
SHEET 12 OF 31

BID SET

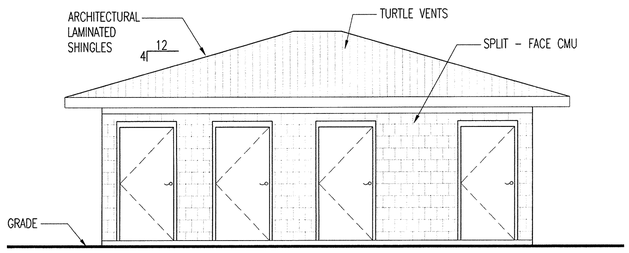
STATE OF UTAH
BOBBY J. PETROFF JR.
6/16/06
132536
LICENSED ARCHITECT



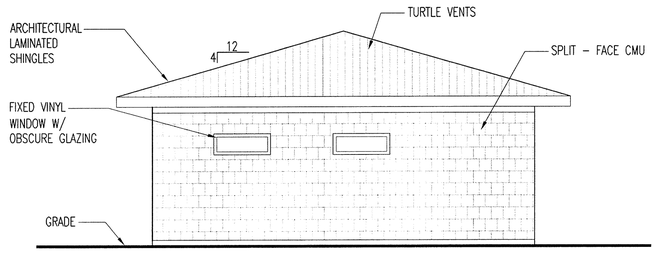
C1 A201 BUILDING SECTION
SCALE: 1/4" = 1'-0"



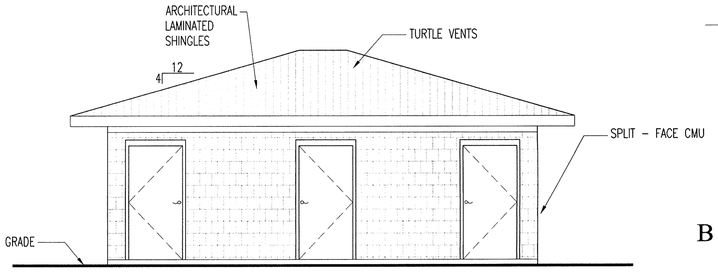
C3 A201 BUILDING SECTION
SCALE: 1/4" = 1'-0"



B1 A201 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



B3 A201 EAST & WEST ELEVATION
SCALE: 1/4" = 1'-0"



B5 A201 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

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3. DO NOT SCALE DRAWINGS.

4. SEE CIVIL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR MORE INFORMATION.

5. SEE G SERIES SHEETS FOR WALL TYPES AND TYPICAL ACCESSIBILITY CLEARANCE AND COMPLIANCE REQUIREMENTS.

6. SEE SHEET A6.1 FOR WINDOW TYPES.

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MARK	DATE	DESCRIPTION

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CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE

ELEVATIONS

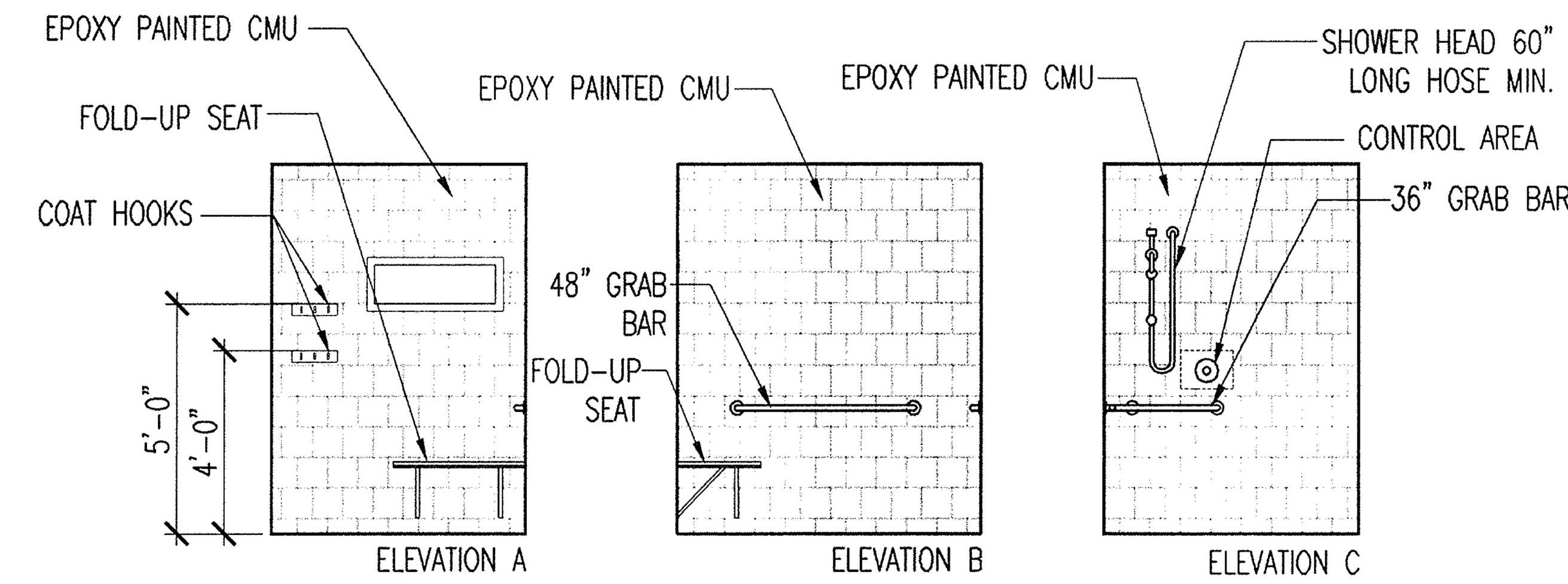
SHEET NUMBER

A201

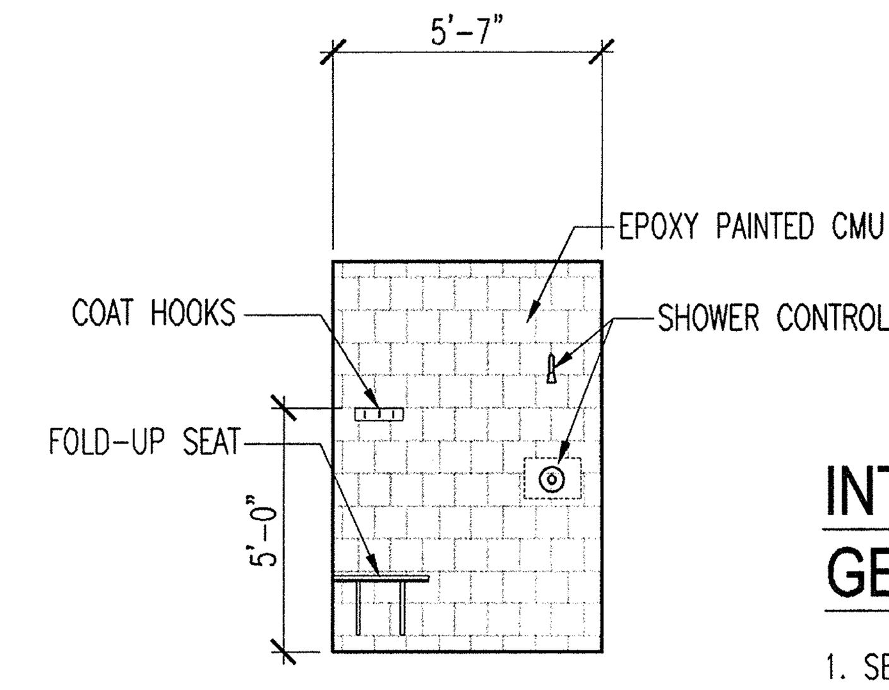
SHEET 13 OF 31

BID SET

STATE OF UTAH ZACHARY PETROFF JR. 04/18/06 332936 LICENSED ARCHITECT



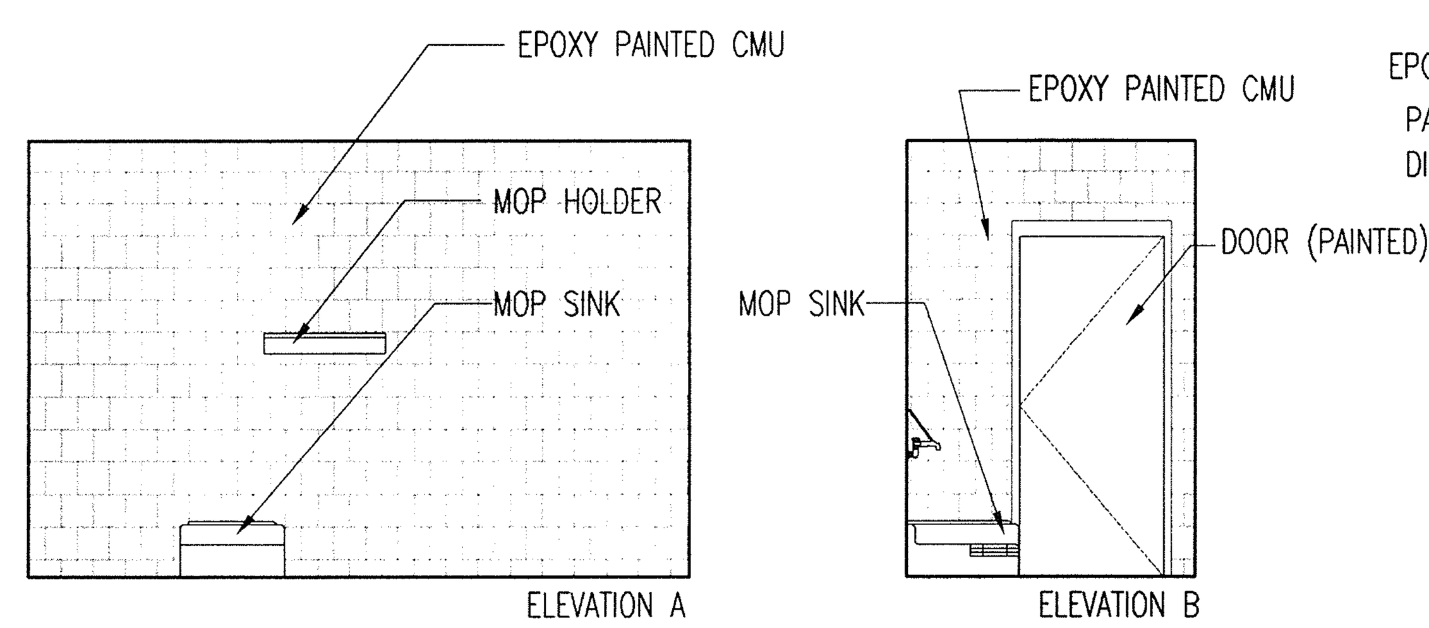
C3 A251 TYPICAL ADA SHOWERS
SCALE: 1/4" = 1'-0"



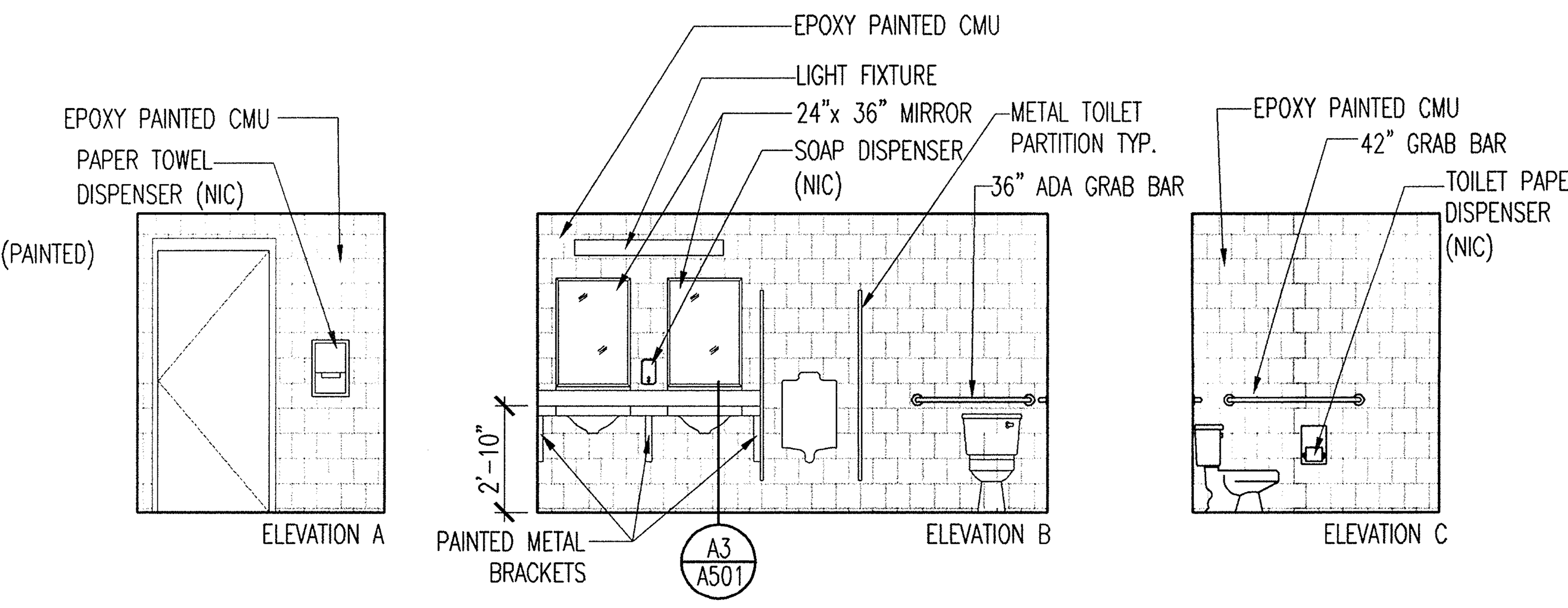
C4 A251 TYPICAL SHOWERS
SCALE: 1/4" = 1'-0"

INTERIOR ELEVATION GENERAL NOTES:

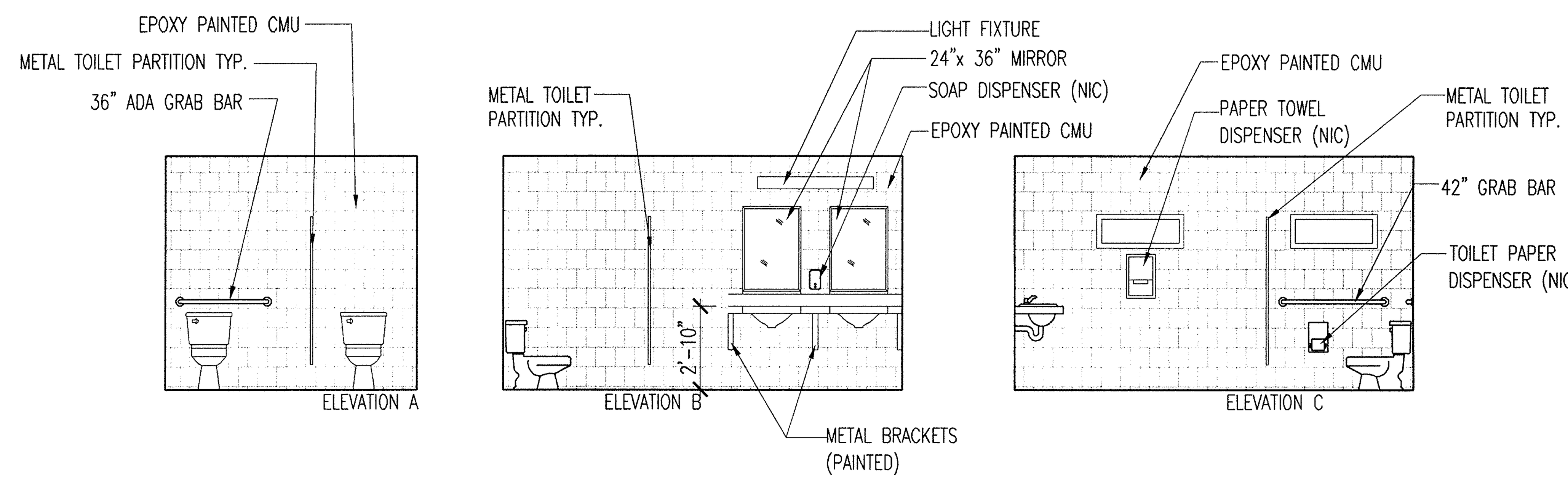
1. SEE G SERIES SHEETS FOR TYPICAL ACCESSIBILITY CLEARANCE AND COMPLIANCE REQUIREMENTS AND MISCELLANEOUS MOUNTING HEIGHTS.



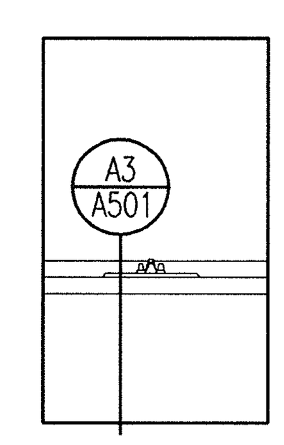
B1 A251 ROOM #202 - CUSTODIAL
SCALE: 1/4" = 1'-0"



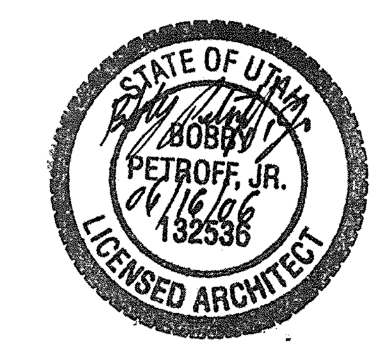
B2 A251 ROOM #203 - MEN'S RESTROOM
SCALE: 1/4" = 1'-0"



B3 A251 ROOM #201 - WOMEN'S RESTROOM
SCALE: 1/4" = 1'-0"



A1 A251 ROOM #205 - UTILITY
SCALE: 1/4" = 1'-0"



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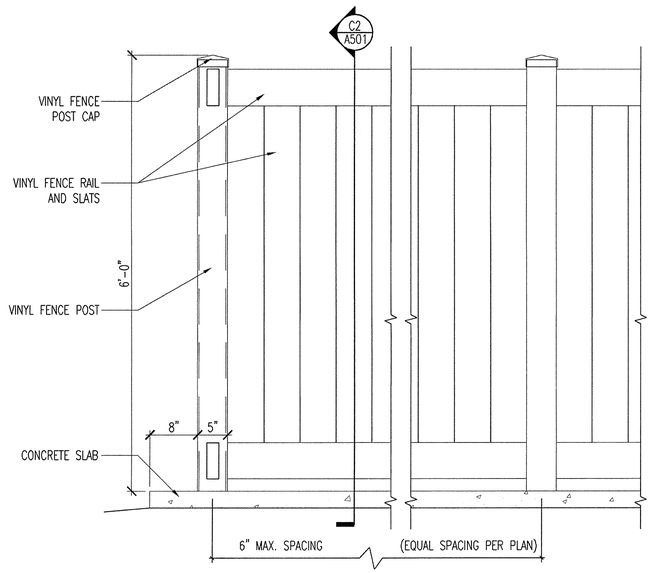
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

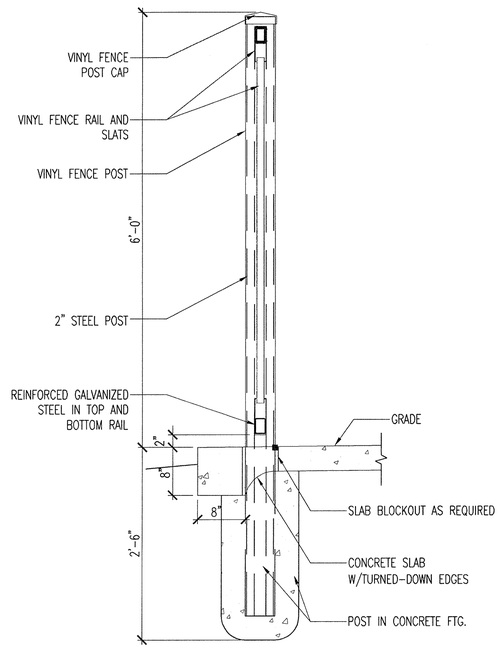
SHEET TITLE
INTERIOR ELEVATIONS

SHEET NUMBER
A251

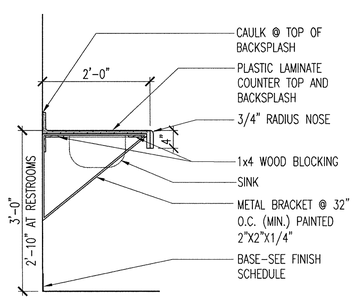
BID SET



C1 A501 PRIVACY SCREEN ELEVATION
SCALE: 1" = 1'-0"



C2 A501 PRIVACY SCREEN SECTION
SCALE: 1" = 1'-0"



A3 A501 CASEWORK DETAIL
SCALE: 3/4" = 1'-0"
06-CAB12

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CACHE COUNTY, UT

PROJECT TITLE:
HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS.

ISSUE DATE: JUNE, 2006

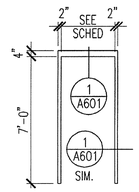
DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: MJW
CHK'D BY: ZPM

SHEET TITLE
DETAILS

SHEET NUMBER
A501

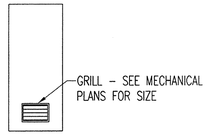
SHEET 15 OF 31

BID SET



FRAME TYPE: A
HOLLOW METAL

D1 DOOR FRAME TYPES
A601 — SCALE: 1/4" = 1'-0"

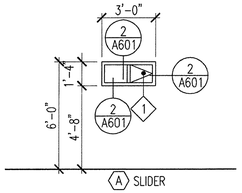


DOOR TYPE: MD1
CONST: INSUL GAL MTL
(PAINTED)

D2 DOOR TYPES
A601 — SCALE: 1/4" = 1'-0"

DOOR AND FRAME SCHEDULE

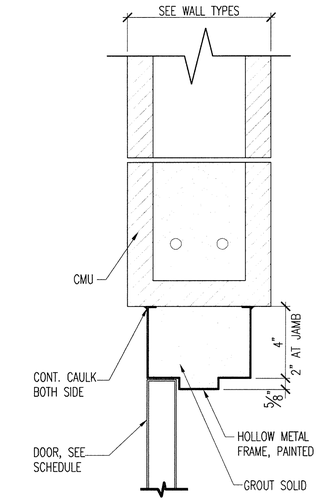
NUMBER	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR TYPE	FRAME TYPE	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FRAME DETAIL THRESH	RATING	HARDWARE GROUP	NOTES	NUMBER
201	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	2	GALVANIZED	201
202	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	3	GALVANIZED	202
203	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	2	GALVANIZED	203
204	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	1	GALVANIZED	204
205	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	3	GALVANIZED	205
206	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	1	GALVANIZED	206
207	3'-0"	7'-0"	MD1	A	1/A601	1/A601	–	–	1	GALVANIZED	207



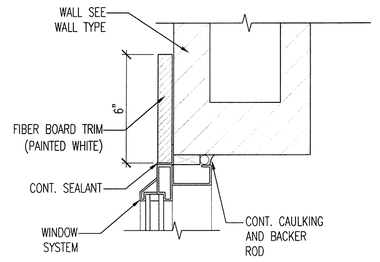
D3 VINYL WINDOW TYPES
A601 — SCALE: 1/4" = 1'-0" — 08-HMW

GLAZING SCHEDULE ◇#

1	1", INSULATED, NON-TEMPERED, LOW-E, OBSCURED



1 HOLLOW METAL HEAD
A601 — SCALE: 3" = 1'-0" — JAMB SIM.



2 VINYL WINDOW HEAD
A601 — SCALE: 3" = 1'-0" — JAMB AND SILL SIM.

DOOR & WINDOW GENERAL NOTES

1. FIELD VERIFY ALL DIMENSIONS PRIOR TO SHOP DRAWING SUBMITTAL & SUBSEQUENT FABRICATION OF ALL DOOR & WINDOW FRAMES.
2. SEE SPECIFICATION SECTION 08710 FOR DOOR HARDWARE GROUP DEFINITIONS.

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Division of Facilities Construction & Management
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Pocatello, ID Office (208) 232-1313
Other Offices in Boise, ID, Twin Falls, ID, Nampa, ID, Couer d' Alene, ID, Kennewick, WA, Spokane, WA

BUILDING NAME:
RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:
HYRUM STATE PARK
GROUP AREA
RESTROOM
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IMPROVEMENTS

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SHEET TITLE
DOOR & WINDOW SCHEDULES

SHEET NUMBER
A601

SHEET 16 OF 31

BID SET

STATE OF UTAH — BOBBY PETROFF JR. — 132536 — LICENSED ARCHITECT

GENERAL STRUCTURAL NOTES & SPECIFICATIONS

1. GENERAL.

A. These structural notes supplement the written specifications and project drawings.
B. Any discrepancy found among the notes, written specifications and project drawings shall be reported to the project Architect/Engineer for correction and/or clarification.
C. The Contractor is responsible to verify all existing construction material types, dimensions, elevations and conditions. He shall verify and coordinate the dimensions among all drawings and in the field prior to proceeding with any work or fabrication, any discrepancy shall be immediately reported to the Architect/Engineer.
D. The Contractor is responsible for all bracing, temporary shoring, water and other environmental controls required during construction to insure the stability and safety of all construction until complete and self-supporting.

2. CODES.

A. International Building Code, IBC 2003 Edition.
B. American Concrete Institute, ACI 318-02, Standard Building Code Requirements for Structural Concrete.
C. American Institute of Steel Construction, AISC 9th Edition, Manual of Steel Construction.
D. American Welding Society, AWS D1.1 2002 Edition, Structural Welding Code.
E. American Iron and Steel Institute, AISI, Specifications for the Design of Cold-Formed Steel Structural Members, 1996 Edition and current addenda.

3. SPECIAL INSPECTIONS. Special Inspections per IBC Chapter 17 are required for the following items:

A. Soils.
- Grading, excavation & fill: By Engineer.
- Final foundation preparation: By Engineer

B. Concrete.
- Reinforcement placement: Periodic.
- Anchor bolts & inserts: Periodic.
- Preparation of test specimens: Continuous.
- Concrete placement: Continuous.
- Epoxy anchor placement: Periodic.
- Expansion anchor placement: Periodic.

C. Welding. Special inspection is not required for work performed by an approved fabricator per IBC Section 1704.2.2
D. Structural Masonry.
- Prism construction: Continuous.
- Reinforcing placement: Periodic.
- Unit placement: Periodic.
- Grout space: Periodic.
- Grout placement: Continuous.

E. All special inspection shall be performed by ICBO certified inspectors.

4. SUBMITTALS.

A. Submit required copies, four (4) minimum, of product or material design information to the Architect/Engineer for review for the following items:
- Concrete mix designs and admixtures.
- Non-shrink grout.
- Expansion bolts.
- Epoxy Anchors.
- Structural masonry grout and mortar mix designs.
- Structural concrete block or brick.
- Metal roof/floor decking.
- Structural steel mill certificates.
- Light-gage structural steel members.
- Welding Procedure Specification, WPS, for each Type 1 Moment Connection Weld on the project.
- Welding electrodes.

5. DEFERRED SUBMITTALS.

The following items to be designed by others are considered "Deferred Submittals". Upon review by the Engineer copies of all design documentation and shop drawings must be transmitted to, reviewed and approved by the local building official prior to fabrication and erection. Deferred submittals shall be accompanied by design drawings, shop drawings and structural calculations, stamped and signed by a Professional Structural Engineer currently registered in the State of Utah.

A. Pre-engineered and shop fabricated wood joists and trusses.

6. FOUNDATIONS.

A. All footings to be placed on firm undisturbed, inorganic material. Proof roll sub-grade prior to placing concrete where the material has been disturbed by the excavating equipment.
B. Allowable bearing pressure for all footings Qa = 1,500 psf
C. Local areas of soft and/or unacceptable material encountered at bottom of footing elevations indicated on the plans must be over-excavated and brought up to design grade with compacted "structural fill" or "lean concrete fill".
D. All structural fill shall be granular, free draining, material; Unified Soils Classification GW, GP, GM or SW; maximum aggregate size of 3-in. and no more than 7% passing a number 200 sieve. Material shall be placed in lifts no greater than 6-in. in depth and compacted to 95% of maximum density as determined per ASTM D1557.
E. Refer to the final "Project Geotechnical Report" by CMT dated Sept 15, 2003.

7. STRUCTURAL MATERIALS.

A. STRUCTURAL STEEL: All structual steel, connectors and bolts to be hot dip galvanized.
- PLATES, BARS, CHANNELS & ANGLES: ASTM A36, Fy=36 ksi.
- STEEL PIPE: ASTM A53 Grade B, Fy=35 ksi.
- SQUARE, RECTANGULAR HSS, STEEL TUBING: ASTM A500 Grade B, Fy=46 ksi.

B. STRUCTURAL BOLTS: High Strength Bolts shall be ASTM A325, Type 1. Nuts for High Strength Bolts shall conform to ASTM A563, Grade DH, Heavy Hex.
C. ANCHOR RODS: Anchor Rods (bolts set into concrete) shall be ASTM F1554, Fy=36 ksi. Nuts for anchor rods shall conform to ASTM A563, Grade A, Heavy Hex.
D. THREADED STEEL RODS: Threaded steel rods shall conform to ASTM A36, Fy=36 ksi. Nuts for threaded rods shall conform to ASTM A563, Grade A, Heavy Hex.
E. WASHERS: All washers shall conform to ASTM F436.
F. BOLT PLACEMENT: All bolts shall be on member standard gage lines except as noted otherwise.
G. CONCRETE: Concrete mix designs shall be verified by standard 28-day cylinder tests per ASTM C39, and be proportioned as follows:
(1) Slabs on grade: f'c = 4,000 psi, Absolute water-cement ratio by weight = 0.45, Air Content = 6 %, Min. 470 lb cement/ cy.
(2) Footings/Foundation Walls: f'c = 3,000 psi, Absolute water-cement ratio by weight = 0.50, Air Content = 6 % Min. 470 lb cement/ cy.
- A water-reducing admixture conforming to ASTM C494, used in strict conformance with the manufacturers instructions, shall be incorporated in all concrete mix designs. At Contractor's option, a high-range water-reducing (HRWR) admixture conforming to ASTM C494, Type F or G, may be used provided the total slump is less than 10".
- Higher water-cement ratios than shown above may be used if substantiated in accordance with ACI 318-89, Chapter 5.
- Fly-ash conforming to ASTM C618 Type F or C, may replace up to 20% of the cement content, provided that the mix strength is substantiated by test data.
- Cement: ASTM C150 Type I or II.
- Water: Clean & Potable.
- Air entraining agent: ASTM C260.
- Aggregate: ¾" Maximum aggregate per ASTM C33.
- Mix Proportioning: ACI 211.1 and 350R.

H. MASONRY: The masonry assemblage shall have a minimum 28 day compressive strength of 1,500 psi. Assembly shall be verified per IBC standards.
I. REINFORCING STEEL: Reinforcing steel shall conform to ASTM A615 Grade 60; #3 bars may be Grade 40.
J. REINFORCING STEEL TO BE WELDED: All reinforcing steel to be welded shall conform to ASTM A706 Grade 60, low-alloy, deformed reinforcing steel.
K. WELDED WIRE FABRIC: ASTM A185 or A496.
L. LUMBER: Grading shall be to the Standard Grading Rules of the WWPA. All structural lumber shall be number 2 Douglas-Fir/Larch. Studs for interior non-bearing walls may be stud grade lumber. Lumber to be left exposed, without other finish and lumber in contact with concrete shall be pressure treated.
M. BOLTS & LAG SCREWS FOR WOOD CONSTRUCTION: Conform to ANSI/ASME Standards B18.2.1-1981 and the National Design Specification for Wood Construction (NDS) 1991 Edition Part VIII for Bolts and Part IX for Screws.
N. WOOD SCREWS: Conform to ANSI/ASME Standards B18.6.1-1981 and the National Design Specification for Wood Construction (NDS) 1991 Edition Part XI.
O. NAILS & SPIKES: Conform to Federal Specification FF-N-105B and the National Design Specification (NDS) 1991 Edition Part XII.
P. NAILING: Where not otherwise specified on the plans, nailing shall conform to IBC Table 2304.9.1, Fastening Schedule. All nails shall be common wire nails or pneumatically driven nails with an equivalent cross-section and penetration, unless noted otherwise.
Q. LUMBER HARDWARE: Wood construction connectors shall be as manufactured by Simpson Strong-Tie Company; current catalog, or an approved equal. Hardware exposed to weather or view, in unheated portions of the structure, or as indicated on the drawings or in the specifications shall be hot-dipped galvanized with galvanized fasteners.
R. ROOF SHEATHING: All roof sheathing shall be 5/8" nominal, Exterior APA rated Sheathing {32/16} installed with ply-clips.
S. EXTERIOR WALL SHEATHING: All exterior wall sheathing shall be 1/2" nominal APA rated Exterior sheathing.
T. MANUFACTURED WOOD BEAMS: Wood beams noted on the plans as ML or PSL beams shall be as manufactured by Trus Joist Macmillan Company and shall provide the following minimum allowable stress values:
- Micro-lam (ML): Grade 1.8E DF, Bending Fb = 2,600 psi, Compression Fc = 750 psi, Shear Fv = 285 psi, Modulus of Elasticity E = 1,800 ksi.
- Parallam, (PSL): Grade 2.0E DF, Bending Fb = 2,900 psi, Compression Fc = 750 psi, Shear Fv = 290 psi, Modulus of Elasticity E = 2,000 ksi.

U. GLUED-LAMINATED WOOD: All members noted on the plans as glued-laminated timber, shall be designed and manufactured per the requirements of ANSI/AITC A190.1. Provide members with the following minimum values:
- Fb = 2,400 psi
- Fv = 140 psi
- Fc parallel = 1,000 psi
- Fc perpen. = 650 psi
- E = 1,400,000 psi
- Dry Condition of Service.
- Standard Commercial Grade Finish.

V. WOOD TIMBERS: All wood timbers to be soft select structural material Doug Fir/Larch with pressure treating after all drilling, cutting and fitting has taken place.
- Fb = 1,600 psi
- Fv = 85 psi
- Fc perpen. = 625 psi
- E = 1,600,000 psi
- Wet Condition of Service
- Treatment - AWPA C3 AND C18

W. NON-SHRINK GROUT: All non-shrink grout noted on the plans shall be non-shrink, non-metallic grout with a minimum 28-day compressive strength of 7,000 psi.
X. EXPANSION BOLTS: Bolts noted on the plans as "Expansion Bolts" shall be HILTI Kwik Bolt-II, stud anchors; size and embedment as noted on the drawings, installed per the manufacturers recommendations; or an approved equal.
Y. EPOXY SET BOLTS & REBAR: Bolts and reinforcing steel bars noted on the plans as "Epoxy Set Bolts or Rebar" shall be HILTI HIT C-100 system; size and embedment as noted on the drawings, installed per the manufacturers recommendations; or an approved equal.
Z. SHOT PINS: Anchors called out as "shot-pins" shall be HILTI, low-velocity powder actuated fasteners, size per the drawings, installed per the manufacturers recommendations; or an approved equal.

8. CONCRETE DETAILS.

A. Concrete work shall conform to Chapter 19 of the International Building Code.
B. All concrete surfaces shall be cured per the specifications and in conformance with ACI 308.1-98.
C. Formwork for concrete shall conform to ACI 347R-94, Guide to Formwork for Concrete. Tolerances for finished concrete surfaces shall meet the following requirements, class of surface is per Table 3.4:
- Footings: Class C
- Foundation walls: Class B
- Other above-grade concrete: Class A

D. In no case shall the tolerance for finished concrete surfaces exceed the following values as measured from neat plan lines and finished grades:
- Footings: +/- ¾ in vertical, +/- 1in horizontal.
- Foundation walls: +/- 3/8 in vertical, +/- 1/2 in horizontal.
- Other Above-grade concrete: +/- 1/4-in vertical, +/-3/8-in horizontal.

E. Unless noted elsewhere on the drawings, all reinforcing steel shall have the following concrete cover:
- Beams & columns: 1 1/2 in
- Interior slabs & wall surfaces: 1 in
- Exterior slab & wall surfaces: 1 1/2 in
- Concrete on grade: 3 in

F. The tolerance, measured from neat plan lines and elevations, for placement of reinforcing steel shall be:
- Members 8-in thick or less: +/- ½ in
- Members thicker than 8-in: +/- 5/8 in

G. Concrete blocks or plastic-coated bar chairs shall be provided for support of all slab reinforcing steel, sufficient in number to prevent settlement or sagging, but in no case shall such support be continuous. Metal clips or supports shall not be placed in contact with the forms or the sub-grade.
H. Dowels and anchor bolts shall be wired or otherwise held in correct position prior to placing concrete. Care shall be taken to insure that dowels and anchor bolts remain plum after concrete is poured and vibrated. In no case shall dowels or anchor bolts be stabbed into freshly poured concrete!
I. Provide dowels in footings and at construction joints to match vertical reinforcing bar size and spacing, unless otherwise noted on the drawings.
J. Coordinate placement of dowels into masonry or brick walls with the masonry shop drawings.
K. All bar bends, hooks, splices and other reinforcing steel details shall conform to the requirements of ACI 315.
L. Unless otherwise noted on the plans all bars shall be spliced with a minimum lap of 32 bar diameters; lap splices of deformed bars and deformed wire in tension zones shall be Class B splices.
M. At all corners and wall intersections provide bent bars to match the horizontal reinforcing steel.
N. Chamfer all exposed corners and fillet entrant angles 3/4" unless otherwise noted on the drawings.
O. CONCRETE FINISHING.
- Floor Slabs: Concrete floor slabs shall be finished in accordance with ACI 302.1 Chapter 8. Provide Class 4 finish unless noted otherwise on the plans or specifications. Provide non-slip finish for exterior surfaces and as noted on the plans.
- Formed Surface Finishing: All formed concrete surfaces shall be finished in accordance with ACI 301.99 Sections 5.3, 6.3, and 7.3. Provide rough formed surface for all surfaces not exposed to view and smooth formed finish for all surfaces exposed to view, unless noted otherwise on the plans or specifications.

P. Minimum reinforcing for concrete walls, unless otherwise noted, shall be as follows:
- 6" walls: #4 @ 15" o.c. horizontal and vertical, in center of wall.
- 8" walls: #4 @ 12" o.c. horiz. and #4 @ 16" o.c. vert., in center of wall.
- 10" walls: #4 @ 16" o.c. horizontal and vertical, each face of wall.
- 12" walls: #4 @ 12" o.c. horizontal and vertical, each face of wall.

Q. At slab and wall openings provide a minimum of two #5 bars over, under and at the sides, of the openings. Extend these bars lap distance or a minimum of 24" past the opening edge. Provide one #5 for single-layer reinforcing and two #5 for double-layer reinforcing. Provide two #4, 4'-0" long diagonally at each re-entrant corner in slabs.

9. PRE-ENGINEERED/FABRICATED WOOD TRUSSES.

A. All pre-engineered/fabricated wood (P.E.W.) trusses indicated on the drawings shall be metal press-plate connected wood trusses designed by a Professional Engineer registered in the State of Idaho per these notes and the specifications.
- Design P.E.W. trusses to the following deflection limits:
- Roof Dead + Live Load: Span/240 or 1 in maximum
- Roof Live Load only: Span/360 or ½ in maximum

B. Shop drawings and design calculations signed and stamped by the Design Engineer shall be submitted to the Architect/Engineer for review prior to fabrication.
C. All necessary bridging, blocking, pre-notched or beveled plates, hangers, etc. shall be detailed or specified on the shop drawings and furnished by the truss manufacturer.
D. Truss manufacturer shall verify all setbacks, dimensions, overhangs, vertical controls and dimensions prior to fabrication.
E. Alteration of the truss layout shown on the plans may require supporting structural and foundation changes, therefore, prior approval by the Architect/Engineer is required for any proposed layout change.
F. Trusses shall not be field modified without written authorization from the truss manufacturer's Engineer of Record.
G. Trusses shall be handled, erected and braced as directed by the truss manufacturer and per the requirements of the Truss Plate Institute Manual HIB-91 or current edition.

10. WOOD SHEATHED DIAPHRAGM SHEATHING REQUIREMENTS.

A. WOOD SHEATHED ROOF DIAPHRAGMS:
- Unless otherwise noted on the drawings, orient roof sheathing with face-grain perpendicular to supporting members, with joints in adjacent rows staggered 1/2 panel length.
- Provide 2x4 flat blocking at unsupported panel edges in areas noted as "Blocked Roof Diaphragm".
- Nail roof sheathing to all supporting members and blocking as follows:

(1) 8d nails @ 4" o.c. at all diaphragm boundaries.
(2) 8d nails @ 4" o.c. at all panel edges.
(3) 8d nails @ 12" o.c. to intermediate framing members.

B. WOOD SHEATHED SHEAR WALLS:
- Shear wall sheathing to be oriented vertically.
- All unsupported edges to be backed with 2x solid blocking.
- Nail sheathing per shear wall schedules shown on drawings.
- Minimum nailing where not noted otherwise shall be 8d nails @ 6" o.c. to all panel edges and 12" o.c. at intermediate supporting members.

11. MECHANICAL OPENINGS.

A. Mechanical openings are not shown on the structural drawings; refer to mechanical plans for size and locations.
B. Openings through metal roof or floor deck shall be reinforced with secondary steel framing per the typical details and/or specifications.
C. Openings through concrete or masonry walls greater than 6-inch square or 8-inch round shall be reinforced with a minimum of 1-#5 bar, each of four sides, extending 24" past the opening edge. In masonry walls the bars shall be placed in solid grouted cores.
D. Openings through framed walls shall be solidly blocked on all four sides with full height studs and top and bottom blocking. Provide a header member across the opening per the typical details where bearing studs are interrupted by the opening.

12. STRUCTURAL BRICK & MASONRY REQUIREMENTS.

A. CONCRETE MASONRY UNITS: All concrete masonry units (CMU) shall conform to ASTM C-90, Grade N, with a minimum net area compressive strength of 1,900 psi.
B. HOLLOW CLAY LOAD BEARING BRICK: All hollow clay load bearing brick units (brick) shall be ATLAS Brick conforming to ASTM C-652 with a minimum compressive strength of 4,000 psi.
C. All block/brick shall be layed up with a standard running bond unless specifically noted otherwise on the drawings.
D. MORTAR: All mortar for use with structural masonry units shall conform to ASTM C270, Class S and have a minimum 28 day strength of 1,800 psi.
E. GROUT: All grout for use with structural masonry units shall conform to ASTM C476 and have a minimum 28 day compressive strength of 2,000 psi.
F. CELLS: Fill all cells containing reinforcing steel and as directed on the drawings with grout in lifts not to exceed 5'-0" in height.
G. BOND BEAMS: All bond beams shall be grouted solid to a minimum height of 8-inches.
H. REINFORCING: All reinforcing steel shall be in place and secured against displacement prior to grouting with wire positioners or other suitable devices at tops and bottoms and intervals not exceeding 192 bar diameters nor 10-feet.
I. ANCHOR BOLTS: Anchor bolts shall be accurately set with templates or by approved equivalent means and held in place to prevent movement.
J. LAPS: Where bars are not continuous lap all #5 bars a minimum of 32 inches and all #4 bars a minimum of 26 inches.
K. BAR PLACEMENT: Where one vertical bar is called for in each vertical core the bar is to be placed in the center of the masonry core. Where two vertical bars are called for they shall be placed near each wall face with 1/5-inch of clearance for fine grout and 1/2" of clearance for course grout.

L. FOUNDATION DOWELS: It is the Contractor's responsibility to coordinate placement of dowels projecting from concrete foundations into reinforced masonry or brick walls.
M. MINIMUM REINFORCING: Where reinforcing is not noted on the drawings provide the following minimum reinforcing steel:
- 4" wall: #4 vertical bars @ 48-inches o.c. centered, one (1) #4 bars in horizontal bond beams @ 48-inches o.c..
- 6" wall: #4 vertical bars @ 48-inches o.c. centered, one (1) #5 bars in horizontal bond beams @ 48-inches o.c..
- 8" wall: #5 vertical bars @ 48-inches o.c. centered, Two (2) #4 bars in horizontal bond beams @ 48-inches o.c..
- 10" wall: #6 vertical bars @ 48-inches o.c. centered, Two (2) #5 bars in horizontal bond beams @ 48-inches o.c..
- 12" wall: #5 vertical bars @ 48-inches o.c. each face, Two (2) #5 bars in horizontal bond beams @ 48-inches o.c..

N. Bond beams with two (2) #4 bars horizontally shall be provided at all floor and roof lines and at the top of walls. Provide a bond beam with two (2) #4 bars horizontally above and below all openings, and extend these bars 2'-0" past the opening edge. Provide full height vertical reinforcement, matching typical vertical reinforcing, each side of openings, at wall ends and intersections.

DESIGN CRITERIA

LOCATION: HYRUM, UTAH

LOADS: FLOOR DEAD LOAD N/A PSF
FLOOR LIVE LOAD N/A PSF
DECK DEAD LOAD N/A PSF
DECK LIVE LOAD N/A PSF
ROOF DEAD LOAD 15 PSF
ROOF SNOW LOAD
Pg 50.0 PSF
Pf 38.5 PSF
Ce 1.0
Is 1.0
Ct 1.1
WIND LOAD
V_{39} 90 MPH
Iw 1.00
Exp C
LAMBDA 1.35
COMPONENTS AND CLADDING N/A

EARTHQUAKE DESIGN DATA
SEISMIC USE GROUP I
SDS 81.0%
SDI 42.9%
SEISMIC REINFORCING SYSTEM
LEVEL 1 - MASONRY SHEAR WALLS
DESIGN BASE SHEAR 0.15 w
ANALYSIS PROCEDURE - EQUIVALENT LATERIAL FORCE

TESTING FREQUENCY:

A. CONCRETE
- 4 CYLINDERS PER 30 CUBIC YARDS OF CONCRETE OR PORTION PLACED EACH DAY.
- TEST ONE CYLINDER AT 7 DAYS, 2 AT 28 DAYS AND RETAIN ONE FOR BACKUP.
- TEST IN ACCORDANCE WITH ASTM C31 AND C39.

B. MASONRY
- UNIT STRENGTH METHOD: VERIFICATION OF f'm PRIOR TO CONSTRUCTION
- GROUT STRENGTH ASTM C-1019: VERIFICATION PRIOR TO CONSTRUCTION
- LETTERS OF CERTIFICATION FOR CONCRETE MASONRY UNITS

AND GROUT ARE REQUIRED.

State of Utah
Department of Administrative Services
Division of Facilities Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
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Fax: (801) 538 - 3267
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Pocatello, ID Office (208) 232-1313
Other Offices in Boise, ID, Twin Falls, ID, Nampa, ID, Couer d' Alene, ID, Kennewick, WA, Spokane, WA

BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: S-001.DWG
DRAWN BY: SRP
CHK'D BY: ZPM

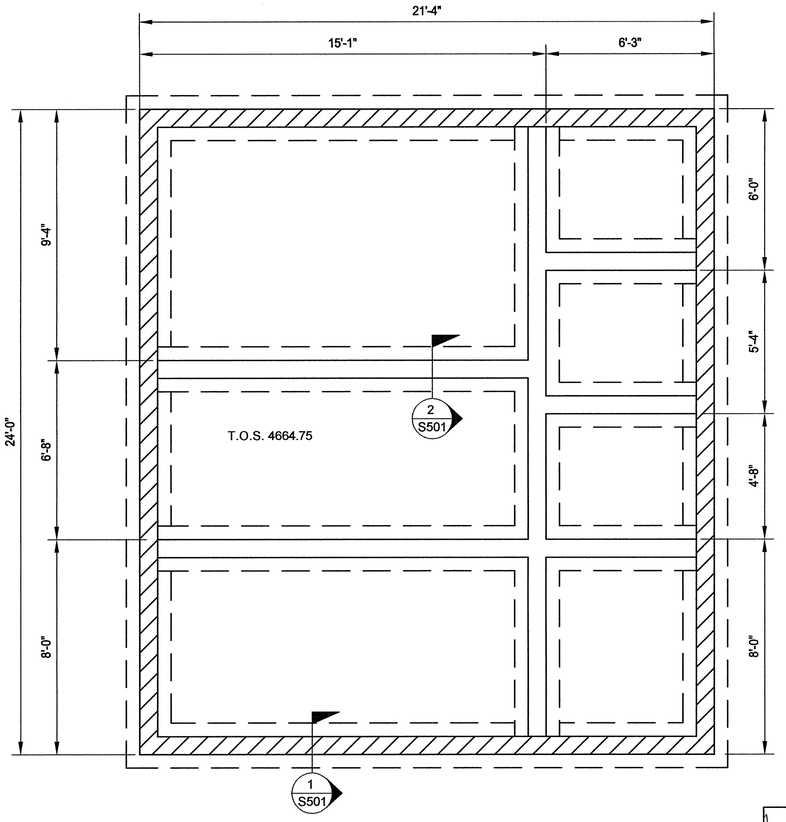
SHEET TITLE

STRUCTURAL NOTES & SYMBOLS

SHEET NUMBER

S-001

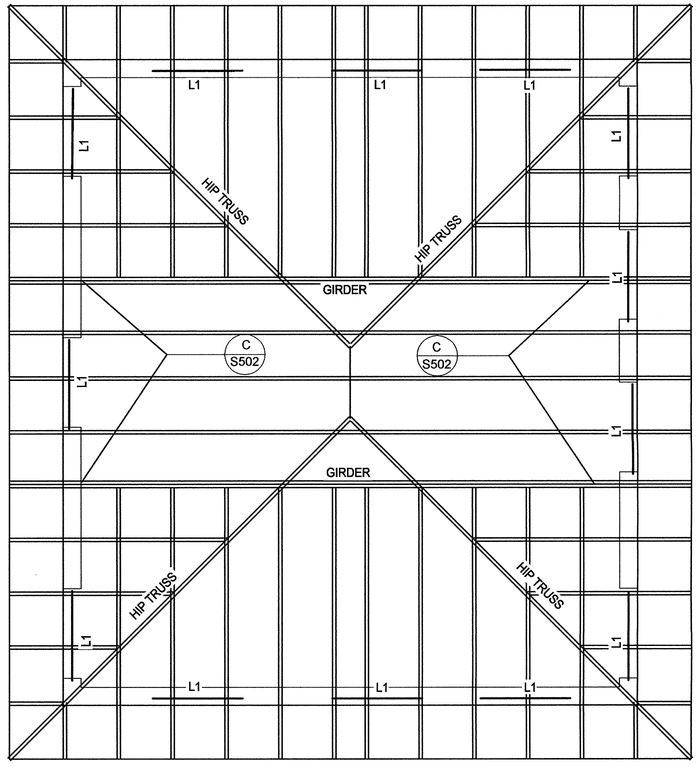
SHEET 17 OF 31



FOUNDATION PLAN RESTROOM

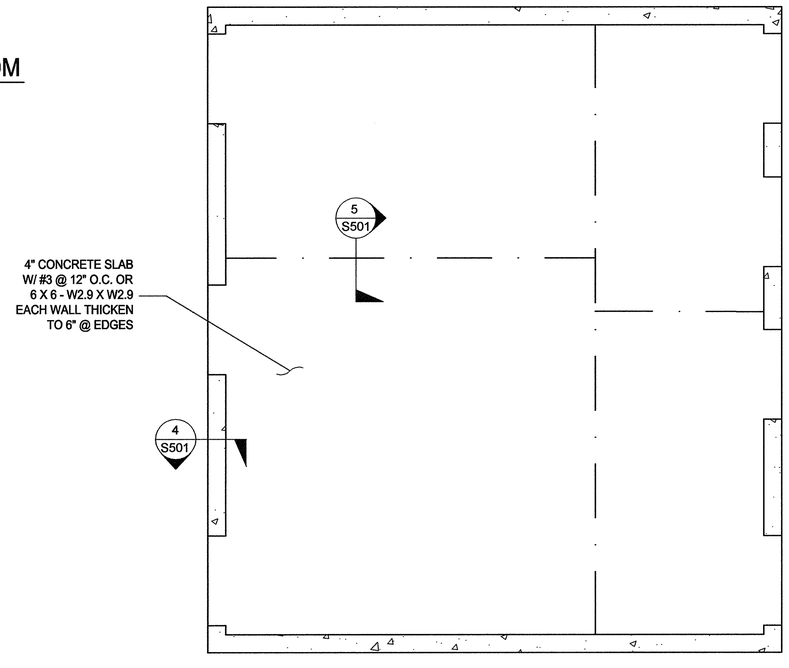
SCALE: 3/8"=1'

NOTE: TOP OF FOOTINGS TO BE AT ELEVATION 4662.75



RESTROOM ROOF FRAMING PLAN

SCALE: 3/8"=1'



RESTROOM BUILDING SLAB PLAN

SCALE: 3/8"=1'

State of Utah
Department of Administrative Services

Division of Facilities
Construction & Management
4110 State Office Building
Salt Lake City, Utah 84114
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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION
1	1/2/04	ELEVATION CHANGE

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: S-100B.DWG
DRAWN BY: SRP
CHK'D BY: ZPM

SHEET TITLE

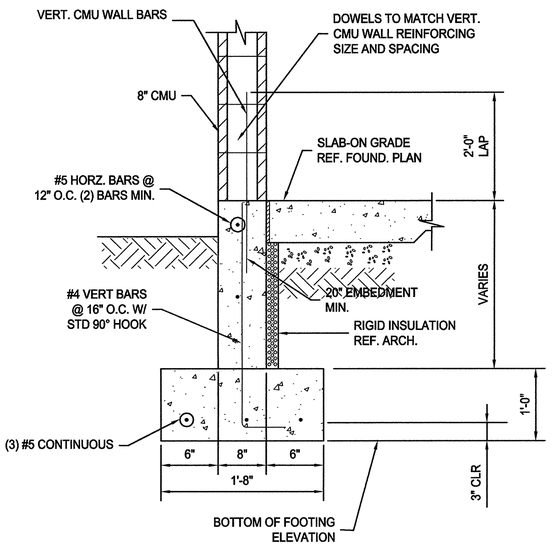
FOUNDATION
PLAN

SHEET NUMBER

S-100

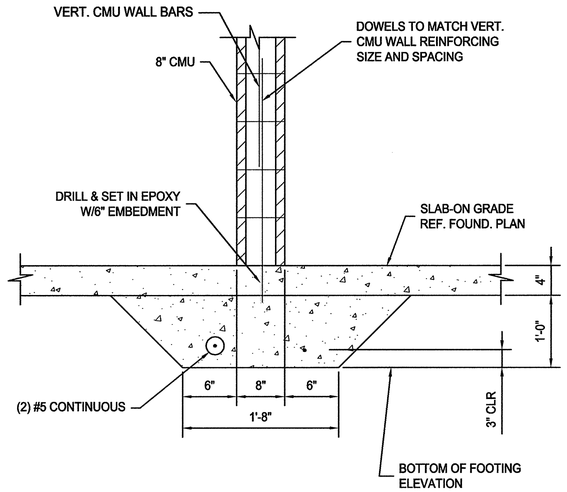
SHEET 18 OF 31

REGISTERED PROFESSIONAL ENGINEER
#353914-2202
ZAN P. MURRAY
6/21/04
STATE OF UTAH



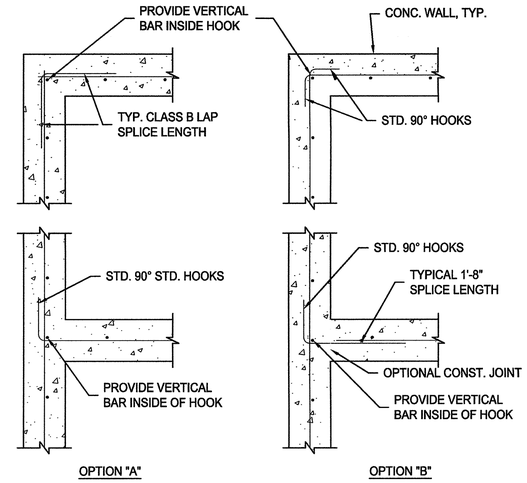
NOTES:
REFER TO OTHER NOTES & DETAILS FOR CMU REINFORCING.
REFER TO FOUNDATION PLANS FOR WIDTH "B" & ELEVATIONS.
REFER TO CONT. WALL FOOTING SCHEDULE FOR REINFORCING.
FLOOR SLAB REINFORCEMENT NOT SHOWN

1 TYP. EXTERIOR CMU WALL FOOTING
SCALE: 3/4"=1'



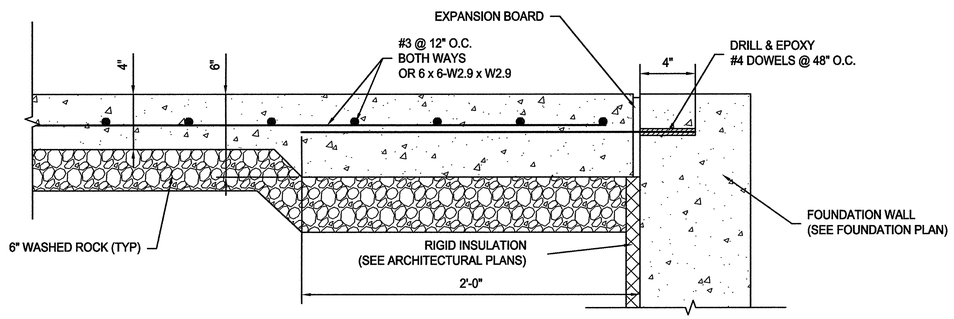
NOTES:
1. REFER TO OTHER NOTES & DETAILS FOR CMU WALL REINFORCING.
2. REFER TO WALL FOOTING SCHEDULE FOR FOOTING REINFORCEMENT.

2 TYP. THICKENED SLAB CMU WALL INTERIOR FAOUNDATION WALL
SCALE: 3/4"=1'

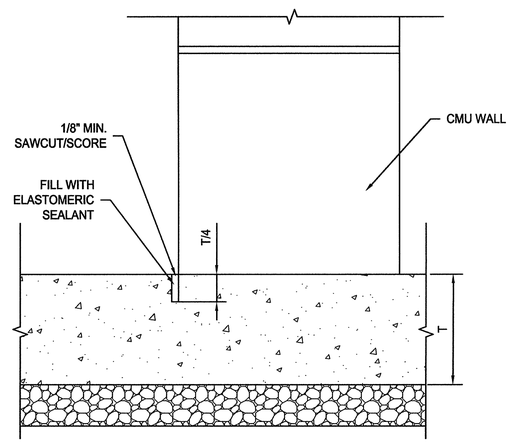


NOTES:
1. CORNER & INTERSECTION BARS TO MATCH SIZE & SPACING OF HORIZONTAL BARS.
2. CORNER VERTICAL BARS IN WALL UNLESS NOTED OTHERWISE.
3. REFER TO OTHER DETAILS FOR REQUIRED BAR SIZE AND SPACING.

3 TYP. CONC WALL INTERSECTION DETAILS INTERIOR FOUNDATION WALL
SCALE: 3/4"=1'



4 FLOOR/FOUNDATION CONNECTION DETAIL
SCALE: 1"=1/2'



5 CRACK CONTROL JOINT TYPICAL @ CMU WALLS
SCALE: 1"=1/4'

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BUILDING NAME:

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STATE PARKS
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PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION
1	1/21/04	FOOTING REVISION

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

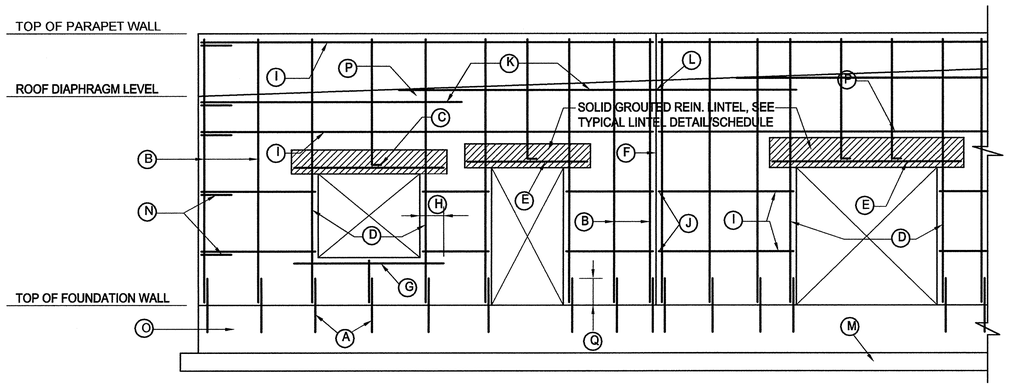
DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: S-501.DWG
DRAWN BY: SRP
CHK'D BY: ZPM

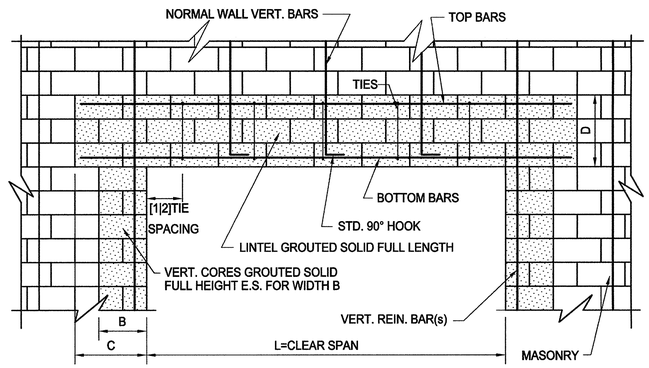
SHEET TITLE

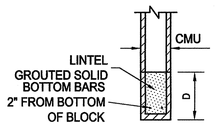
FOOTING DETAILS

SHEET NUMBER

S-501







TYPE I LINTEL

LINTEL SCHEDULE

LOCATION	MASONARY	TYPE	DIMENSIONS				REINFORCING		
			L	B	C	D	TOP	BOTTOM	TIES
L1	8"	I	<=10'	8"	16"	24"	N.A.	2-#5	N.A.

NOTES:
1. REFER TO WALL SECTIONS & SCHEDULES FOR REINFORCING.
2. REFER TO FRAMING PLANS &ARCHITECTURAL SHEETS FOR MASONRY OPENING LOCATIONS.
3. PROVIDE LINTELS AT ALL OPENINGS REINFORCED PER TYP.-U.N.O. WHERE NO OTHER DESINATION IS LISTED.
4. LINTEL SCHEDULE ON SHEET S-102

B - STANDARD CMU LINTEL DETAIL
SCALE: 1/2"=1'

(A)	FOUNDATION DOWELS TO MATCH VERTICAL BAR LOCATIONS	(G)	(1) #4 BAR UNDER EACH OPENING.
(B)	VERTICAL WALL BARS, REFER TO WALL REINFORCING SCHEDULE.	(H)	40 BAR DIAMETERS MINIMUM.
(C)	STANDARD 90° HOOK.	(I)	HORIZ. BOND BEAM REINFORCMENT, SEE WALL REIN. SCHEDULE.
(D)	VERTICAL BAR EACH SIDE OF WALL OPENINGS.	(J)	STOP BOND BEAM BARS @ WALL CONTROL JOINT.
(E)	REFER TO LINTEL REINFORCING SCHEDULE (SHEET S102).	(K)	DIAPHRAGM CHORD BOND BEAMS.
(F)	VERTICAL WALL CONTROL (C.J.) JOINTS.	(L)	CONTINUE BARS ACROSS WALL CONTROL JOINT.
(M)	FOOTING, SEE OTHER DETAILS.	(O)	FOUNDATION WALL, SEE OTHER DETAILS
(N)	CORNER BARS AT EACH BOND BEAM.	(P)	LAP DIAPHRAGM B.B. BARS 64db MINIMUM.
(Q)	LAP 32" MINIMUM		

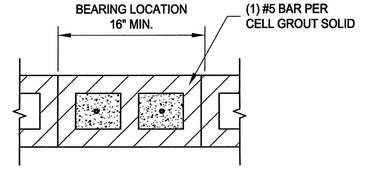
NOTES:
WALL SHOWN IS A REPRESENTATIVE SECTION OF REINFORCED BRICK OR MASONRY WALL.
REFER TO PLANS AND ELEVATION VIEWS FOR ACTUAL WALL AND OPENING DIMENSIONS.
REFER TO OTHER DETAILS AND SCHEDULES FOR ADDITIONAL REINFORCING REQUIREMENTS.

WALL REINFORCING SCHEDULE

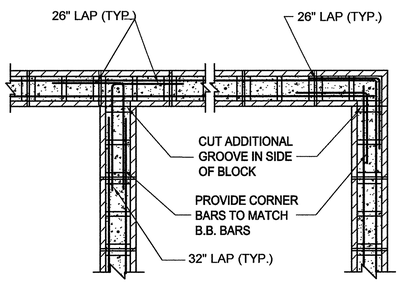
LOCATION	WIDTH	VERTICAL	HORIZONTAL
EXTERIOR	8"	#5 @ 32" O.C.	(2) - #4 @ 48 O.C.
EXTERIOR	6"	#5 @ 32" O.C.	(1) - #4 @ 48" O.C.
INTERIOR	8"	#5 @ 32" O.C.	(1) - #4 @ 48" O.C.
INTERIOR	6"	#5 @ 32" O.C.	(1) - #4 @ 48" O.C.

*APPLIES TO ALL BUILDINGS ON THE SITE

A - WALL REINFORCEING DETAIL
SCALE: 1/4"=1'



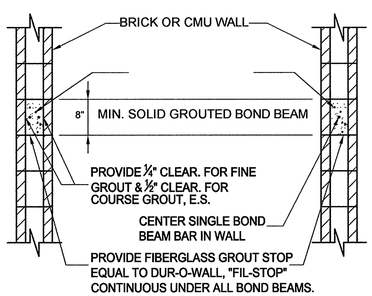
C - FLUSH WALL PLASTER DETAIL
SCALE: 1/6"=1'



BOND BEAM @ INTERSECTION BOND BEAM @ CORNER

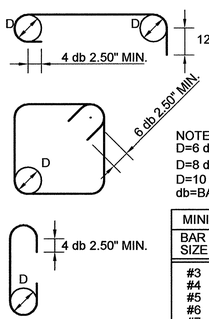
NOTES:
REFER TO OTHER DETAILS & NOTES FOR REINFORCING SIZE 7 SPACING
BOND BEAM TO BE SOLID GROUTED FULL LENGTH & HEIGHT. .

D - BOND BEAM INTERSECTION DETAIL
SCALE: 1/4"=1'



E - MASONRY BOND BEAM DETAIL
SCALE: 1/4"=1'

NOTE: FOR DETAILS NOT SHOWN COMPY WITH ACI STANDARD PRACTICE.

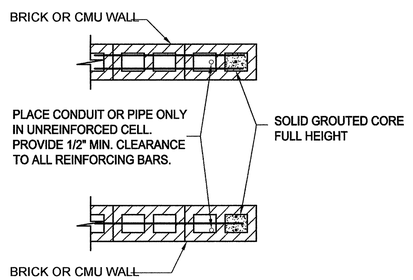


NOTE:
D=6 db FOR #3 TO #8 BARS
D=8 db FOR #9 TO #11 BARS
D=10 db FOR #14 & # 18 BARS
db=BAR DIAMETER

MINIMUM BAR LAPS U.N.O.		
BAR SIZE	CONCRETE	MASONRY
#3	9"	12"
#4	12"	15"
#5	15"	19"
#6	18"	23"
#7	21"	27"
#8	24"	30"

NOTE: LAPS IN SCHEDULE ARE MIMIMUMS UNLESS NOTED OTHERWISE.

F - REINFORCING BEND DETAILS
SCALE: 3/4"=1'



NOTES:
REFER TO OTHER DETAILS & NOTES FOR REINFORCING.
DO NOT TIE CONDUIT/PIPE TO REINFORCING STEEL

G - CONDUIT OR PIPE W/IN MASONRY WALLS
SCALE: 3/4"=1'

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PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: GROUP AREA

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: S-502.DWG
DRAWN BY: SRP
CHK'D BY: ZPM

SHEET TITLE

CMU WALL DETAILS

SHEET NUMBER

S-502

SHEET 20 OF 31

SYMBOLS LEGEND

ABBREVIATIONS

AD	ACCESS DOOR
AIR COND	AIR CONDITION(–ING,–ED)
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BD	BALANCING DAMPER
BHP	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
BTUH	BTU/HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
COMP	COMPONENT
COND	CONDENS(–ER,_ING,–ATION)
CLG	COOLING
CV	CONTROL VALVE
CW	COLD WATER
DIA	DIAMETER
DISCH	DISCHARGE
DP	DEPTH OR DEEP
ID	INSIDE DIAMETER
OD	OUTSIDE DIAMETER
DB	DRY BULB TEMPERATURE
(E)	EXISTING
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EG	ETHYLENE GLYCOL
ELEC	ELECTRIC
ELEV	ELEVATION
ENT	ENTERING
EWT	ENTERING WATER TEMPERATURE
EVAP	EVAPORAT(–E,–ING,–ED,–OR)
EXT	EXTERNAL
(F)	FUTURE
F	FAHRENHEIT
FC	FLEXIBLE CONNECT(–OR,–ION)
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD	FIRE SMOKE DAMPER
FT	FEET
G	NATURAL GAS
GAL	GALLON(S)
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HG	MERCURY
HR	HOUR
HT	HEIGHT
HTG	HEATING
HP	HORSE POWER
HW	HOT WATER
HZ	HERTZ(FREQUENCY)
IN	INCH
KW	KILOWATT
LH	LATENT HEAT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
LG	LENGTH
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MIN	MINIMUM
NO	NORMALLY OPEN
NO	NUMBER
NC	NOISE CRITERIA
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE
OZ	OUNCE
OA	OUTSIDE AIR
P	PUMP
PG	PROPYLENE GLYCOL
PH	PHASE
PPM	PARTS PER MILLION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
PRESS	PRESSURE
PD	PRESSURE DROP OR DIFFERENCE
SP	STATIC PRESSURE
RECIRC	RECIRCULATE
RA	RETURN AIR
RAD	RADIATOR
REFR	REFRIGERATION
REQR	REQUIRED
RLA	RATED --- AMPS
RPM	REVOLUTIONS PER MINUTE
RW	RAINWATER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCW	SOFT COLD WATER
SF	SAFETY FACTOR
SL	SEA LEVEL
SH	SENSIBLE HEAT
SC	SHADING COEFFICIENT
SPECS(S)	SPECIFICATION(S)
SQ	SQUARE
STD	STANDARD
STM	STEAM
SP	STATIC PRESSURE
SPLY	SUPPLY
SA	SUPPLY AIR
TEMP	TEMPERATURE
TD	TEMP. DROP OR DIFF.
THERM	THERMAL
R	THERMAL RESISTANCE
TOT	TOTAL
TSTAT	THERMOSTAT
T	TIME
TOT HGT	TOTAL HEAT
V	VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VENT	VENT, VENTILATION
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WTR	WATER
WT	WEIGHT
WB	WET BULB TEMP.
YR	YEAR

GENERAL

X–1 PLUMBING FIXTURE CALLOUT

XX EQUIPMENT CALLOUT

TAG / CFM / SIZE DIFFUSER/GRILLE CALLOUT

NUM / SHT DETAIL CALLOUT

NUM / SHT SECTION CALLOUT

TAG / SIZE

KEYNOTE CALLOUT

REVISION TAG

DUCTWORK

SINGLE LINE

RECTANGULAR SUPPLY DUCT UP

RECTANGULAR SUPPLY DUCT DOWN

RECTANGULAR RETURN DUCT UP

RECTANGULAR RETURN DUCT DOWN

RECTANGULAR EXHAUST DUCT UP

RECTANGULAR EXHAUST DUCT DOWN

ROUND DUCT UP

ROUND DUCT DOWN

90° RECTANGULAR ELBOW WITH TURNING VANES

90° RADIUS ELBOW R = 1.5

DUCT SIZE OR SHAPE TRANSITION

OPPOSED BLADE BALANCING DAMPER (O.B.D.) IN RECT DUCT

BUTTERFLY BALANCING DAMPER IN ROUND DUCTS

COMBINATION TEE

SQUARE OR RECTANGULAR CEILING DIFFUSER

SIDEWALL REGISTER SUPPLY OR RETURN

EXHAUST GRILLE

SYMBOLS

SHUT OFF VALVE

GATE VALVE

CHECK VALVE

GLOBE VALVE

BALL VALVE

RELIEF VALVE

PRESSURE REDUCING VALVE

FLOW SETTER

STOP & WASTE VALVE

STRAINER

PRESSURE GAUGE

THERMOMETER

REDUCER CONCENTRIC

90° ELBOW UP

90° ELBOW DOWN

90° TEE UP

90° TEE DOWN

UNION

CAPPED PIPE

THERMOSTAT (T)

WALL HYDRANT W.H.

HOSE BIBB H.B.

CLEANOUT TO GRADE

WALL CLEANOUT

NEW CONNECTION POINT TO EXISTING

PIPING

PLUMBING

SOIL, WASTE–BELOW GRADE

VENT

COLD WATER

HOT WATER

HOT WATER CIRCULATE

VENT THRU ROOF (VTR)

MECHANICAL GENERAL NOTES

1. ALL CEILING EXHAUST GRILLES SHOWN AS SUCH ARE EG–1, CFM AS NOTED, UNLESS OTHERWISE NOTED. (CFM)
2. DO NOT ROUTE DUCTS AND PIPES ABOVE ELECTRICAL PANELS. ALL ELECTRICAL PANELS MUST HAVE CLEAR ACCESS SPACE IN FRONT OF PANEL 4'–0" DEEP AND 6'–6" HIGH. DO NOT ROUTE DUCTS AND PIPES IN ELECTRICAL ROOMS, EXCEPT DUCTS AND PIPES SERVING THE ROOM.
3. COORDINATE EXACT LOCATIONS OF CEILING GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLAN.
4. ALL DUCT DIMENSIONS ARE INSIDE FREE AREA DIM.
5. PROVIDE CEILING ACCESS PANELS AS REQUIRED WHERE MECHANICAL EQUIPMENT, VALVES, VAV BOXES, ETC. ARE LOCATED ABOVE INACCESSIBLE CEILINGS.

PLUMBING GENERAL NOTES

1. INSTALL WATER AND VENT PIPING SHOWN ABOVE THE CEILING UNLESS NOTED OTHERWISE.
2. INSTALL WASTE PIPING SHOWN BELOW THE FLOOR UNLESS NOTED OTHERWISE.
3. INSTALL ALL PIPING SHOWN IN EXTERIOR WALLS ON THE WARM SIDE OF THE BUILDING INSULATION.
4. INSTALL EXTERIOR DRAINAGE PIPING 48" DEEP MINIMUM.
5. DO NOT RUN PIPING ABOVE ELECTRICAL PANELS. PROVIDE 4'–0" DEEP X 6'–6" HIGH CLEAR ACCESS SPACE IN FRONT OF PANELS. DO NOT RUN PIPING IN ELECTRICAL ROOMS.
6. PROVIDE 2" MINIMUM WASTE PIPING BELOW GRADE.
7. FIELD DETERMINE EXACT SIZE, ELEVATION AND LOCATION OF EXISTING PIPING INSIDE THE BUILDING AT SPECIFIED CONNECTION POINTS PRIOR TO STARTING ANY WORK.
8. COORDINATE EXACT LOCATION OF FIXTURES AND DRAINS WITH ARCHITECTURAL DRAWINGS.
9. PROVIDE 3" MINIMUM VENT THRU ROOF. INCREASE VENT LINE 12" BELOW BUILDING INSULATION.
10. INSTALL PIPING WITH 1/32–INCH–PER–FOOT (0.25 PERCENT) SLOPE TOWARD WATER HEADER IN FREE STANDING RESTROOM BUILDING.

MECHANICAL SHEET INDEX

SHEET NO	SHEET TITLE
M001	SHEET INDEX, SYMBOL SCHEDULE
M002	MECHANICAL SPECIFICATIONS
M003	PLUMBING SPECIFICATIONS
M004	PLUMBING SPECIFICATIONS
M101	MECHANICAL & PLUMBING PLANS
M501	MECHANICAL SCHEDULES & DETAILS
M502	PLUMBING SCHEDULES & DETAILS

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Registered Professional Engineer — NEIL H. SPENCER No. 5484 — for Neil Spencer 6/12/06 — State of Utah

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GROUP AREA
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PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: 32M001.dwg
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SHEET TITLE

SHEET INDEX, SYMBOL SCHEDULE

SHEET NUMBER

M001

SHEET 21 OF 31

MECHANICAL SPECIFICATIONS

HVAC GENERAL NOTES

DESIGN/BUILD NOTES:
A. THESE DRAWINGS AND SPECIFICATIONS ARE FOR THE DIVISION 15 CONTRACTOR TO BID AND INSTALL A HEATING, AIR CONDITIONING AND VENTILATION SYSTEM PER THE DESIGN INTENT SHOWN.

B. ALL EQUIPMENT, PIPING, DUCTWORK, COMPONENT AND ACCESSORY SIZES, CAPACITIES, AND TYPES SHOWN IN THESE DRAWINGS AND SPECIFICATIONS SHALL BE ADHERED TO.

C. THE CONTRACTOR SHALL INSTALL A COMPLETE AND FULLY OPERATIONAL SYSTEM.

D. AS-BUILT DRAWINGS SHOWING ALL EQUIPMENT, COMPONENTS, PIPING, AND CONTROLS SHALL BE PREPARED TO THE SAME SCALE AS THESE DRAWINGS. AS-BUILT DRAWINGS SHALL BE ON MYLAR AND BE DRAWN IN AUTOCAD. DISK COPIES SHALL BE PROVIDED TO THE OWNER AND ARCHITECT/ENGINEER.

1. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE, OPERATIONAL HVAC SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THESE DRAWINGS, INCLUDING ALL NECESSARY FEES AND PERMITS.

2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL BUILDING CODE, AND ALL OTHER APPLICABLE CITY, COUNTY, AND STATE CODES AND REGULATIONS IN EFFECT AT THE DATE OF THE BID. CONFORM TO ANY CODES, RULES, REGULATIONS AND REQUIREMENTS THAT THE PROJECT OWNER HAS.

3. COORDINATE THE INSTALLATION OF ALL HVAC PIPING, DUCTWORK, AND EQUIPMENT WITH PLUMBING PIPING, PLUMBING EQUIPMENT, FIRE PROTECTION PIPING AND ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO: THE MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, FIRE PROTECTION CONTRACTOR, GENERAL CONTRACTOR, AND ANY CONTRACTOR HIRED DIRECTLY BY THE OWNER PRIOR TO FABRICATION AND INSTALLATION. WHERE CONFLICTS MAY OCCUR, THEY SHALL BE RESOLVED PRIOR TO INSTALLATION.

4. THE DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENTS AND THE EXTENT OF THE SYSTEM. IT SHALL BE THE WORK OF THE CONTRACTOR TO MAKE SUCH SLIGHT ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS SUCH AS CHANGES IN COMPONENT SIZES, WEIGHTS, QUANTITIES, OR MATERIAL REQUIRE PRIOR APPROVAL BY THE CONSULTING ENGINEER.

5. ALL HVAC INFORMATION IS NOT SHOWN ON THE HVAC DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND REFRIGERATION DRAWINGS.

6. THE WORKING DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR HVAC EQUIPMENT AND PIPING SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL DRAWINGS.

7. SPACE ABOVE ALL CEILINGS IS EXTREMELY LIMITED. CAREFUL COORDINATION IS REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPMENT IS ORDERED AND/OR INSTALLED. 1/8" SCALE SHOP DRAWINGS (SUBMITTED TO SPECTRUM ENGINEERS FOR APPROVAL) ARE REQUIRED FOR ALL DIVISION 15 WORK. ANY CONFLICTS AND/OR CHANGES FOUND DURING INSTALLATION THAT RESULT FROM LACK OF COORDINATION BY THE CONTRACTORS DURING THE SHOP DRAWING PROCESS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

8. THE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH.

9. DETAILS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND USE WHERE APPROPRIATE ALL OF THE MECHANICAL DETAILS SHOWN ON THE DRAWINGS. DETAILS MAY OR MAY NOT BE CALLED OUT ON THE DRAWINGS WITH SYMBOLS OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE MECHANICAL SYSTEM WITHOUT USING THE INCLUDED DETAILS IS THE RESPONSIBILITY OF THE CONTRACTOR.

10. PIPING SCHEMATICS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE PIPING SCHEMATICS INCLUDED WITH THE DRAWINGS FOR PIPING CONNECTIONS TO ALL MECHANICAL EQUIPMENT. THE PIPING SCHEMATICS SHOW DETAILED CONNECTIONS INCLUDING NECESSARY VALVES, FITTINGS, PRESSURE AND TEMPERATURE GAUGES, ETC., THAT ARE NOT SHOWN ON THE PIPING PLANS. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE MECHANICAL SYSTEM WITHOUT USING THE INCLUDED PIPING SCHEMATICS IS THE RESPONSIBILITY OF THE CONTRACTOR.

11. PREPARE 6 COPIES OF SUBMITTALS IN AN INDEXED, LABELED FOLDER CONTAINING FULL PERFORMANCE, MATERIAL AND INSTALLATION INFORMATION ABOUT ALL EQUIPMENT, PIPING, COMPONENTS AND ACCESSORIES TO BE USED. SPECTRUM ENGINEERS WILL CHECK SUBMITTALS AT MOST TWICE. TIME SPENT ON SUBSEQUENT SUBMITTALS WILL BE BILLED TO THE CONTRACTOR BY THE ENGINEER AT ITS CURRENT HOURLY RATES.

12. THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTAIN TO A PORTION OR ANY PORTION OF THE BUILDING. COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

13. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

14. ALL EQUIPMENT SHALL PROVIDE THE SCHEDULED PERFORMANCE AT THE SITE ALTITUDE.

15. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, DAMPERS, AND OTHER DEVICES AND ACCESSORIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION.

16. THE DIVISION 15 CONTRACTOR SHALL FURNISH ALL REQUIRED MOTORS. ALL MOTOR STARTING EQUIPMENT, WHEN NOT A PART OF THE EQUIPMENT, WILL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.

17. THE CONTRACTOR IS RESPONSIBLE FOR HVAC EQUIPMENT CHECK-IN, SAFEKEEPING, AND DAMAGE.

18. PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.

19. TWO OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED IN HARD BACK LOOSE LEAF BINDERS. MANUALS SHALL CONTAIN PRODUCT CUT SHEETS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL EQUIPMENT, ACCESSORIES, FIXTURES, VALVES, ETC., PROVIDED FOR THE PROJECT.

20. UPON COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS AND RUBBISH. MAKE ALL REQUIRED PATCHING AND REPAIRS OF OTHER TRADES' WORK DAMAGED BY THIS CONTRACTOR, AND LEAVE THE PREMISES IN A CLEAN, ORDERLY CONDITION.

21. THE CONTRACTOR SHALL OPERATE THE SYSTEM AND DEMONSTRATE ALL ASPECTS TO THE ENGINEER AND/OR OWNER, TO PROVE ITS OPERATION. ALL FILTERS USED DURING CONSTRUCTION SHALL BE REPLACED PRIOR TO THE TEST RUN PERIOD.

22. THE CONTRACTOR SHALL GUARANTEE THE HVAC SYSTEM FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

23. THE CONTRACTOR SHALL, DURING CONSTRUCTION, MAINTAIN A SET OF AS-BUILT REDLINED RECORD DRAWINGS AT THE PROJECT SITE. ALL CHANGES IN LAYOUT, ROUTING, EQUIPMENT, COMPONENTS, AND ACCESSORIES SHALL BE RECORDED. THESE REDLINES SHALL BE GIVEN TO THE ARCHITECT/ENGINEER AFTER THE FINAL INSPECTION.

15010 – BASIC MECHANICAL REQUIREMENTS
COORDINATE THE LOCATION OF ALL NEW ROOF OPENINGS AND THE LOCATION OF ALL NEW ROOF MOUNTED EQUIPMENT WITH THE STRUCTURE AND ARCHITECTURAL PLANS PRIOR TO ANY INSTALLATION.

V-BELT DRIVES SHALL BE OF FABRIC AND RUBBER CONSTRUCTION. BELT GUARDS SHALL BE PROVIDED FOR ALL EXPOSED BELTS AND DRIVES.

PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.

15055– BASIC PIPING MATERIALS AND METHODS
ALL PIPE PENETRATIONS OF EXISTING WALLS MASONRY OR CONCRETE AND FLOORS SHALL BE CORE CUT. PENETRATIONS THROUGH NEW WALLS AND FLOORS SHALL BE SLEEVED. SEAL ALL PENETRATIONS WATERTIGHT WITH SILICONE SEALANT. USE FIRE RATED SEALANT FOR 1 HR OR 2 HR PENETRATIONS.

15100 – VALVES
PROVIDE VALVES OF THE TYPE AND QUANTITY SHOWN ON THE DRAWINGS. VALVES OF THE SAME TYPE TO BE BY ONE MANUFACTURER.

15190 – MECHANICAL IDENTIFICATION:
PIPING:
PLASTIC TAPE: MANUFACTURER'S STANDARD COLOR-CODED PRESSURE-SENSITIVE (SELF ADHESIVE) VINYL TAPE, NOT LESS THAN 3 MILS THICK. 1-1/2" WIDE TAPE MARKERS ON PIPES WITH OUTSIDE DIAMETERS (INCLUDING INSULATION, IF ANY) OR LESS THAN 6", 2-1/2" WIDE TAPE FOR LARGER PIPES.

DUCT MARKERS: MANUFACTURER'S STANDARD LAMINATED PLASTIC; COLOR CODED DUCT MARKERS.

COLOR: COMPLY WITH ANSI A13.1

LETTERING: MANUFACTURER'S STANDARD PRE-PRINTED NOMENCLATURE WHICH BEST DESCRIBES PIPING OR DUCT SYSTEM IN EACH INSTANCE OR AS SELECTED BY ARCHITECT OR ENGINEER IN CASES OF VARIANCE WITH NAMES AS SHOWN.

ARROWS: PRINT EACH MARKER WITH ARROWS INDICATING DIRECTION OF FLOW.

VALVE TAGS:
PLASTIC LAMINATE VALVE TAGS: MANUFACTURER'S STANDARD 3/32" THICK ENGRAVED TAGS WITH PIPING SYSTEM ABBREVIATION IN 1/4" HIGH LETTERS AND SEQUENCED VALVE NUMBERS 1/2" HIGH, WITH 5/32" HOLE FOR FASTENER. PROVIDE 1-1/2" SQUARE BLACK TAGS WITH WHITE LETTERING.

VALVE TAG FASTENERS: PROVIDE MANUFACTURER'S STANDARD SOLID BRASS CHAIN (WIRE LINK OR BEADED TYPE), OR SOLID BRASS S-HOOKS OF THE SIZED REQUIRED FOR PROPER ATTACHMENT OF TAGS TO VALVES, AND MANUFACTURED SPECIFICALLY FOR THAT PURPOSE.

15242 – VIBRATION ISOLATION AND SEISMIC
ALL PLUMBING EQUIPMENT, MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING MUST BE VIBRATION ISOLATED AND SEISMICALLY BRACED FOR THE SITE SPECIFIC SEISMIC DESIGN CATEGORY AND SEISMIC USE GROUP, IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE IBC, UBC, ASHRAE, AND SMACNA. PROVIDE SEISMIC PRODUCTS BY AMBER-BOOTH OR MASON INDUSTRIES.

IN GENERAL, PROVIDE SPRING MOUNTS TO ATTENUATE LOW FREQUENCY SOUND AND VIBRATION AND NEOPRENE PADS TO ATTENUATE HIGH FREQUENCY SOUND AND VIBRATION. SEISMIC BRACING/MOUNTING CAN BE COMBINED WITH VIBRATION ISOLATION AS APPLICABLE.

CONTRACTOR MANUFACTURED SEISMIC BRACING/RESTRAINT METHODS ARE NOT ACCEPTABLE. PROVIDE A SIGNED AND STAMPED LETTER FROM A PROFESSIONAL ENGINEER CERTIFYING THAT THE SUPPLIED PRODUCTS ARE CORRECT FOR THE APPLICATION AND THAT THE INSTALLATION IS IN COMPLIANCE WITH ALL APPLICABLE CODES.

15250 – MECHANICAL INSULATION
PIPE INSULATION TO BE SNAP-ON GLASS FIBER TYPE WITH VAPOR JACKET. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED SYSTEM. ALTERNATIVELY, USE FLEXIBLE UNICELLULAR ASTM 534 TYPE 1 INSULATION. USE 1" THICKNESS FOR PIPE UP TO 2"ø, AND 1 1/2" FOR PIPE OVER 2"ø

PROVIDE ADA COMPLIANT FIXTURES WITH SNAP ON ADA ARTICLE 4.19 22FF COMPLIANT WHITE INSULATION. TRUEBRO LAV GUARD, BASIN GUARD OR LAV SHIELD.

15411 – WATER DISTRIBUTION PIPING

NO TYPE "M" OR DWV COPPER IS TO BE USED IN THIS PROJECT.

ALL ABOVE GROUND HOT AND COLD WATER PIPING SHALL BE ASTM B 88 TYPE "L" COPPER, WITH WROUGHT COPPER FITTINGS AND SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER.

INSTALL PIPE HANGERS WITH THE FOLLOWING MINIMUM ROD SIZES AND MAXIMUM SPACING. UPON COMPLETION OF HANGER INSTALLATION, ALL ADJUSTMENTS HAVING THE POSSIBILITY OF TURNING SHALL BE LOCKED SECURELY IN PLACE BY DOUBLE NUTTING AT THE HANGER ROD ATTACHMENT TO THE STRUCTURE, AND AT THE PIPE HANGER.

NOM. PIPE SIZE	MAX. SPAN-FT.	MIN. ROD SIZE-INCHES
1	7	3/8
1-1/2	9	3/8
2	10	3/8
3	12	1/2
4	14	5/8
6	17	3/4

ALL PIPE HANGERS AND EQUIPMENT SUPPORTS SHALL BE LOCATED A MINIMUM DISTANCE OF 2" FROM ANY REFRIGERANT PIPE.

ALL PLUMBING FIXTURES CONNECTED TO A POTABLE WATER SYSTEM WITH HOSE CONNECTIONS ON THE OUTLET SIDE AND OWNER FURNISHED EQUIPMENT WITH DIRECT CONNECTIONS, SHALL BE PROVIDED WITH BACKFLOW PREVENTION.

CLEAN AND DISINFECT WATER PIPING PER AWWA C651 OR C652 PROCEDURES.

15420 – DRAINAGE AND VENT SYSTEMS
UNDERGROUND BUILDING DRAIN PIPE AND FITTINGS SHALL BE HUB AND SPIGOT CAST IRON SOIL PIPE, OR ASTM A888 (OR CISPI 301) HUBLESS CAST IRON SOIL PIPE WITH ASTM C564 HEAVY DUTY SHIELDED STAINLESS STEEL COUPLINGS.

ABOVE GROUND SANITARY DRAINAGE AND VENT PIPING, IN ALL AREAS EXCEPT AIR PLENUMS AND ANYWHERE IN A FIRED RATED BUILDING, SHALL BE SERVICE WEIGHT, NO HUB CAST IRON COUPLED PIPE AND FITTINGS WITH COMPRESSION TYPE NEOPRENE GASKETS AND STAINLESS STEEL BANDS. ASTM B306 COPPER PIPE MAY BE USED WITH SOLDERED JOINTS FOR PIPE 3" AND SMALLER.

INSTALL SANITARY DRAIN LINES 2-1/2" AND LESS WITH A SLOPE OF 2%. INSTALL SANITARY DRAIN LINES 3"-6" WITH A SLOPE OF NOT LESS THAN 1%.

SLOPE ROOF DRAIN LINES DOWN IN DIRECTION OF FLOW, 1/8" PER FOOT.

15850 – FANS
FANS SHALL BE COOK, ILG, PENN OR APPROVED EQUAL.

15891– METAL DUCTWORK
ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION, (SMACNA).

DUCTWORK SHALL BE GALVANIZED STEEL THROUGHOUT, FABRICATED AND INSTALLED SO THAT NO VIBRATION OR NOISE RESULTS. IT SHALL BE MADE FROM THE BEST GRADE OF GALVANIZED MILLED STEEL SHEETS OF U.S. STANDARD GAUGE AND BE FREE FROM BLISTERS, SLIVERS, AND PITS. ALL SEAMS SHALL BE AIRTIGHT, THE CONSTRUCTION OF ALL DUCTWORK, INCLUDING GAUGES OF METAL, BRACING LAYOUT, ETC., SHALL BE IN ACCORDANCE WITH SMACNA. SLEEVES FOR FIRE DAMPERS AND DUCT SECTIONS FORMING AN EXTENSION OF THE FIRE WALL SHALL BE 10 GAUGE STEEL.

SEAL DUCTWORK ACCORDING TO THE FOLLOWING SMACNA DUCT SEALING CLASS:

DUCT LOCATION	DUCT TYPE			
	SUPPLY		EXHAUST	RETURN
	<2in. WG	>2in. WG		
OUTDOORS	A	A	A	A
UNCONDITIONED SPACES	B	A	B	B
CONDITIONED SPACES (CONCEALED DUCTWORK)	C	B	B	B
CONDITIONED SPACES (EXPOSED DUCTWORK)	A	A	B	B

HANGERS FOR DUCTS UP TO 18" IN WIDTH OR DIAMETER SHALL BE PLACED ON NOT MORE THAN 8 FOOT CENTERS. DUCTS 19" AND OVER IN WIDTH OR DIAMETER SHALL BE SUPPORTED ON NOT MORE THAN 4 FOOT CENTERS. DUCT HANGERS SHALL BE CONSTRUCTED OF GALVANIZED BAND IRON 1-1/8" FOR DUCTS UP TO 36" IN WIDTH OR DIAMETER. HANGERS SHALL EXTEND DOWN SIDES AND A MINIMUM OF 1" UNDER RECTANGULAR DUCTS, AND WRAP COMPLETELY AROUND ROUND DUCTS. ALL DUCTS SHALL BE RIGIDLY SUPPORTED.

ALL DUCTWORK SHALL BE CLEANED PRIOR TO THE INSTALLATION OF CEILING AND DIFFUSERS. OPERATE FANS TO BLOW OUT DUCTWORK.

15910 – DUCTWORK ACCESSORIES

SQUARE ELBOWS SHALL BE PROVIDED WITH TURNING VANES.

PROVIDE ACCESS DOORS AT ALL LOCATIONS OF BALANCING DAMPERS AND VALVES, ETC., WHERE THERE IS NOT A LIFT-OUT TYPE CEILING. ACCESS DOORS SHALL BE HINGED OF METAL CONSTRUCTION WITH SCREWDRIVER LATCHES. WHERE DUCTS ARE INSULATED, COVERS SHALL BE INSULATED.

GRAVITY OR BACKDRAFT DAMPERS SHALL BE ALL ALUMINUM CONSTRUCTION, INTERCONNECTED AND BLADED, PRESSURE DROP THROUGH DAMPERS SHALL NOT EXCEED 0.04 INCH W.G.

15932 – GRILLES, DIFFUSERS & LOUVERS
ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL BE COMPLETE WITH FRAMES AND RUBBER GASKETS. FINISH FOR ALL REGISTERS, DIFFUSERS, AND GRILLES SHALL BE WHITE.

THE FOLLOWING KRUEGER (OR EQUAL) PRODUCTS SHALL BE USED:

LOUVER FACE:	SH OR 1400	SIDEWALL GRILLE:	800 (SUPPLY)
SLOT DIFFUSERS:	1910		S80 (RETURN)
PERFORATED DIFFUSERS:	6504 (SUPPLY)		480H (HEAVY DUTY
	6290 (RETURN)		SUPPLY & RETURN)
ARCHITECTURAL:	PLQ	DOOR GRILLE:	600
DRUM LOUVERS:	DPL	EGG CRATE:	EGC-5
ROUND:	RA2	LINEAR GRILLE:	1600
		FLOOR GRILLE:	1800

COORDINATE THE LOCATIONS OF ALL CEILING GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL LIGHTING LAYOUT, AND ARCHITECTURAL ELEVATIONS.

LOUVERS SHALL HAVE MINIMUM FREE AREA AND MAXIMUM PRESSURE DROP AS LISTED IN SCHEDULE. LOUVER SHALL HAVE FRAME AND SILLS COMPATIBLE WITH ADJACENT SUBSTRATE AND FIT ACCURATELY FOR WEATHERPROOF INSTALLATION. LOUVERS SHALL BE COMPLETE WITH 1/2" MESH ANODIZED ALUMINUM BIRD SCREEN.

15970 – AUTOMATIC TEMPERATURE CONTROL SYSTEM
FURNISH AND INSTALL A COMPLETE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL SYSTEM TO PROVIDE THE FOLLOWING FUNCTIONS:

1. FREE STANDING REST ROOM BUILDING CONTROL SYSTEM:

A. TOILET EXHAUST FAN:

SUMMER MODE: EXHAUST FAN SHALL OPERATE WHEN SUPPLY FAN IS OPERATING. PROVIDE INTERLOCKING BETWEEN EXHAUST FAN AND OUTSIDE AIR DAMPER SUCH THAT OUTSIDE AIR DAMPER OPENS WHEN EXHAUST FAN IS OPERATING.

WINTER MODE: EXHAUST FAN SHALL NOT OPERATE DURING WINTER MONTHS. EXHAUST DUCTWORK SHALL OPERATE AS RETURN DUCTWORK BY CLOSING DAMPER TO MAIN EXHAUST DUCT AND OUTSIDE AIR VENT THEN OPENING DAMPER TO RETURN DUCT MAIN.

15990 – TESTING, ADJUSTING AND BALANCING
OBTAIN THE SERVICES OF AN INDEPENDENT TESTING AND BALANCING AGENCY TO BALANCE AND ADJUST THE SYSTEM. THIS SHALL BE DONE BY PERSONS FULLY FAMILIAR WITH SYSTEMS OF THIS TYPE. BALANCING SHALL BE DONE IN ACCORDANCE TO AABC OR NEBB STANDARDS. ALL DATA SHALL BE RECORDED AND A REPORT SUBMITTED TO THE ENGINEER PRIOR TO JOB CLOSE OUT.

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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
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CHK'D BY: RDV

SHEET TITLE
SPECIFICATIONS

SHEET NUMBER
M002

SHEET 22 OF 31

PLUMBING GENERAL NOTES

PLUMBING GENERAL NOTES

DESIGN/BUILD NOTES:
A. THESE DRAWINGS AND SPECIFICATIONS ARE FOR THE DIVISION 15 CONTRACTOR TO ENGINEER, DESIGN, BID AND INSTALL A PLUMBING SYSTEM PER THE DESIGN INTENT SHOWN.

B. ALL EQUIPMENT, PIPING, COMPONENT AND ACCESSORY SIZES, CAPACITIES, AND TYPES SHOWN IN THESE DRAWINGS AND SPECIFICATIONS SHALL BE ADHERED TO.

C. THE CONTRACTOR SHALL DESIGN AND INSTALL A COMPLETE AND FULLY OPERATIONAL SYSTEM.

1. PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE, OPERATIONAL PLUMBING SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THESE DRAWINGS, INCLUDING ALL NECESSARY FEES AND PERMITS.

2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, UNIFORM MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL BUILDING CODE, UNIFORM PLUMBING CODE, UNIFORM BUILDING CODE, AND ALL OTHER APPLICABLE CITY, COUNTY, SCHOOL DISTRICT AND STATE CODES AND REGULATIONS IN EFFECT AT THE DATE OF THE BID. CONFORM TO ANY CODES, RULES, REGULATIONS AND REQUIREMENTS THAT THE PROJECT OWNER HAS.

3. PRIOR TO FABRICATION AND INSTALLATION THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PLUMBING PIPING, DUCTWORK, AND EQUIPMENT WITH PLUMBING PIPING, PLUMBING EQUIPMENT, ALL DUCTWORK, AND ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO THE MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, GENERAL CONTRACTOR, AND ANY CONTRACTOR HIRED DIRECTLY BY THE OWNER. WHERE CONFLICTS MAY OCCUR, THEY SHALL BE RESOLVED PRIOR TO INSTALLATION.

4. THE DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENTS AND THE EXTENT OF THE SYSTEM. IT SHALL BE THE WORK OF THE CONTRACTOR TO MAKE SUCH SLIGHT ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS SUCH AS CHANGES IN COMPONENT SIZES, WEIGHTS, QUANTITIES, OR MATERIAL REQUIRE PRIOR APPROVAL BY THE CONSULTING ENGINEER.

5. ALL PLUMBING INFORMATION IS NOT SHOWN ON THE PLUMBING DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.

6. THE WORKING DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR PLUMBING EQUIPMENT AND PIPING SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL DRAWINGS.

7. EXACT ROUTING OF WASTE, GAS, AND WATER SERVICE IS DEPENDENT ON LOCAL SITE CONDITIONS AND MODIFICATIONS IN EQUIPMENT CONNECTIONS. EXACT LOCATION OF EQUIPMENT MAY VARY DEPENDING ON LOCAL CODE, HEALTH DEPARTMENT AND CITY REQUIREMENTS.

8. DETAILS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND USE WHERE APPROPRIATE ALL OF THE PLUMBING DETAILS SHOWN ON THE DRAWINGS. DETAILS MAY OR MAY NOT BE CALLED OUT ON THE DRAWINGS WITH SYMBOLS OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE PLUMBING SYSTEM WITHOUT USING THE INCLUDED DETAILS IS THE RESPONSIBILITY OF THE CONTRACTOR.

9. PIPING SCHEMATICS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE PIPING SCHEMATICS INCLUDED WITH THE DRAWINGS FOR PIPING CONNECTIONS TO ALL PLUMBING EQUIPMENT. THE PIPING SCHEMATICS SHOW DETAILED CONNECTIONS INCLUDING NECESSARY VALVES, FITTINGS, PRESSURE AND TEMPERATURE GAUGES, ETC., THAT ARE NOT SHOWN ON THE PIPING PLANS. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE PLUMBING SYSTEM WITHOUT USING THE INCLUDED PIPING SCHEMATICS IS THE RESPONSIBILITY OF THE CONTRACTOR.

10. THE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH.

11. PREPARE 6 COPIES OF SUBMITTALS IN AN INDEXED, LABELED FOLDER CONTAINING FULL PERFORMANCE, MATERIAL AND INSTALLATION INFORMATION ABOUT ALL EQUIPMENT, PIPING, COMPONENTS AND ACCESSORIES TO BE USED. SPECTRUM ENGINEERS WILL CHECK SUBMITTALS AT MOST TWICE. TIME SPENT ON SUBSEQUENT SUBMITTALS WILL BE BILLED TO THE CONTRACTOR BY THE ENGINEER AT ITS CURRENT HOURLY RATES.

12. THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTAIN TO A PORTION OR ANY PORTION OF THE BUILDING. COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.

13. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

14. ALL EQUIPMENT SHALL PROVIDE THE SCHEDULED PERFORMANCE AT THE SITE ALTITUDE.

15. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES AND ACCESSORIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION.

16. ALL MOTORS REQUIRED SHALL BE BY THE DIVISION 15 CONTRACTOR. ALL MOTOR STARTING EQUIPMENT, IF NOT A PART OF THE EQUIPMENT, IS FURNISHED BY THE ELECTRICAL CONTRACTOR.

19. THE CONTRACTOR IS RESPONSIBLE FOR PLUMBING EQUIPMENT CHECK-IN, SAFEKEEPING, AND DAMAGE.

20. INVERTS SHOWN ON PLUMBING DRAWINGS MAY BE REFERENCED FROM THE FINISHED FLOOR ELEVATION. COORDINATE ALL INVERTS WITH CIVIL DRAWINGS PRIOR TO INSTALLATION.

21. PROVIDE WALL CLEANOUTS IN ALL VENTS FOR COMBINATION WASTE AND VENT SYSTEMS AS REQUIRED BY LOCAL AND NATIONAL CODES.

22. ALL VENT FITTINGS FOR WASTE SYSTEMS BELOW OVERFLOWS OF FIXTURES SHALL BE DRAINAGE TYPE.

23. CONTRACTOR TO COMPLY WITH THE LATEST ADOPTED IPC WHEN SIZING TRAP ARMS ON COMBINATION WASTE AND VENT SYSTEMS. THE DRAWINGS INDICATE THE WASTE LINE SIZE AND THE SIZE OF THE TRAP REQUIRED.

24. PROVIDE CLEANOUTS IN ACCORDANCE WITH THE REQUIREMENTS OF APPLICABLE CODES. FLOOR CLEANOUTS SHALL BE LOCATED OUT OF TRAFFIC AREAS.

25. LOCATE ALL PLUMBING VENTS AT LEAST 3 FEET ABOVE OR 10 FEET AWAY FROM ALL OUTSIDE AIR INTAKES INTO THE BUILDING.

26. SEE "PLUMBING FIXTURE SCHEDULE" FOR FIXTURE MAKE AND TYPE, AND SIZE OF INDIVIDUAL WASTE, VENT, AND DOMESTIC WATER PIPING TO FIXTURES.

27. ALL PLUMBING EQUIPMENT SHALL BE LISTED AND LABELED BY AN APPROVED TESTING AGENCY.

28. EQUIPMENT AND INSTALLATION SHALL MEET NATIONAL SANITATION FOUNDATION (NSF) STANDARDS, OR EQUIVALENT.

29. PROVIDE PROPER PROVISIONS FOR EXPANSION OR MOVEMENT OF ALL PIPING.

30. ALL PIPE SHALL BE SECURED BY DOUBLE NUTTING AT THE HANGER ROD ATTACHMENT TO THE STRUCTURE, AND AT THE PIPE HANGER.

31. PROVIDE WATER HAMMER ARRESTORS (SHOCK ABSORBERS) AT ALL PIPE LOCATIONS WHERE VALVE CLOSURES (SUCH AS FLUSH VALVES) MAY CAUSE WATER HAMMER OR RESULT IN EXCESSIVE PIPE VIBRATION OR MOVEMENT.

32. PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.

33. TWO OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED IN HARD BACK LOOSE LEAF BINDERS. MANUALS SHALL CONTAIN PRODUCT CUT SHEETS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL EQUIPMENT, ACCESSORIES, FIXTURES, VALVES, ETC., PROVIDED FOR THE PROJECT.

34. UPON COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS AND RUBBISH. MAKE ALL REQUIRED PATCHING AND REPAIRS OF OTHER TRADES' WORK DAMAGED BY THIS CONTRACTOR, AND LEAVE THE PREMISES IN A CLEAN, ORDERLY CONDITION.

35. THE CONTRACTOR SHALL OPERATE THE SYSTEM AND DEMONSTRATE ALL ASPECTS TO THE ENGINEER AND/OR OWNER, TO PROVE IT'S OPERATION.

36. THE CONTRACTOR SHALL GUARANTEE THE PLUMBING SYSTEM FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.

37. THE CONTRACTOR SHALL, DURING CONSTRUCTION, MAINTAIN A SET OF AS-BUILT REDLINED RECORD DRAWINGS AT THE PROJECT SITE. ALL CHANGES IN LAYOUT, ROUTING, EQUIPMENT, COMPONENTS, AND ACCESSORIES SHALL BE RECORDED. THESE REDLINES SHALL BE GIVEN TO THE ARCHITECT/ENGINEER AFTER THE FINAL INSPECTION.

PLUMBING SPECIFICATIONS

15055 – BASIC PIPING MATERIALS AND METHODS
CAULK AROUND ALL PIPING THAT PASSES THROUGH FIRE-RATED PARTITIONS WITH A NON-HARDENING CAULKING SIMILAR TO 3M "FIRE BARRIER".

SEAL ALL PIPING THROUGH WALLS AIR TIGHT.

15242 – VIBRATION ISOLATION AND SEISMIC
ALL PLUMBING EQUIPMENT AND PIPING MUST BE VIBRATION ISOLATED AND SEISMICALLY BRACED FOR THE SITE SPECIFIC SEISMIC DESIGN CATEGORY AND SEISMIC USE GROUP, IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE IBC, UBC, ASHRAE, AND SMACNA. PROVIDE SEISMIC PRODUCTS BY AMBER-BOOTH OR MASON INDUSTRIES.

IN GENERAL, PROVIDE SPRING MOUNTS TO ATTENUATE LOW FREQUENCY SOUND AND VIBRATION AND NEOPRENE PADS TO ATTENUATE HIGH FREQUENCY SOUND AND VIBRATION. SEISMIC BRACING/MOUNTING CAN BE COMBINED WITH VIBRATION ISOLATION AS APPLICABLE.

CONTRACTOR MANUFACTURED SEISMIC BRACING/RESTRAINT METHODS ARE NOT ACCEPTABLE. PROVIDE A SIGNED AND STAMPED LETTER FROM A PROFESSIONAL ENGINEER CERTIFYING THAT THE SUPPLIED PRODUCTS ARE CORRECT FOR THE APPLICATION AND THAT THE INSTALLATION IS IN COMPLIANCE WITH ALL APPLICABLE CODES.

15250 – MECHANICAL INSULATION
PIPE INSULATION TO BE SNAP-ON GLASS FIBER TYPE WITH VAPOR JACKET. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED SYSTEM. ALTERNATIVELY, FOR INTERIOR WATER PIPING, USE FLEXIBLE UNICELLULAR ASTM 534 TYPE 1 INSULATION. USE 1" THICKNESS FOR PIPE UP TO 2"ø AND 1 1/2" FOR PIPE OVER 2"ø

PROVIDE ADA COMPLIANT FIXTURES WITH SNAP ON ADA ARTICLE 4.19 22FF COMPLIANT WHITE INSULATION. TRUEBRO LAV GUARD, BASIN GUARD OR LAV SHIELD.

15411 – WATER DISTRIBUTION PIPING
ALL UNDERGROUND WATER PIPING, 2" AND SMALLER, SHALL BE ASTM 88 TYPE "K" COPPER WITH A MINIMUM NUMBER OF SOLDERED JOINTS. USE 95-5 TIN ANTIMONY COPPER SOLDER. 2-1/2" AND LARGER UNDERGROUND PIPE MUST BE PVC AWWA 900 CLASS 100 WITH SOLVENT CEMENTED JOINTS, OR PB PLASTIC PIPE ASTM D3309 SDR 11 WITH HEAT FUSION JOINTS.

NO TYPE "M" OR DWV COPPER IS TO BE USED IN THIS PROJECT.

ALL ABOVE GROUND HOT AND COLD WATER PIPING SHALL BE ASTM B 88 TYPE "L" COPPER, WITH WROUGHT COPPER FITTINGS AND SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER.

INSTALL PIPE HANGERS WITH THE FOLLOWING MINIMUM ROD SIZES AND MAXIMUM SPACING. UPON COMPLETION OF HANGER INSTALLATION, ALL ADJUSTMENTS HAVING THE POSSIBILITY OF TURNING SHALL BE LOCKED SECURELY IN PLACE BY DOUBLE NUTTING AT THE HANGER ROD ATTACHMENT TO THE STRUCTURE, AND AT THE PIPE HANGER.

NOM. PIPE SIZE	MAX. SPAN-FT.	MIN. ROD SIZE-INCHES
1	7	3/8
1-1/2	9	3/8
2	10	3/8
3	12	1/2
4	14	5/8
6	17	3/4

ALL PIPE HANGERS AND EQUIPMENT SUPPORTS SHALL BE LOCATED A MINIMUM DISTANCE OF 2" FROM ANY REFRIGERANT PIPE.

ALL PLUMBING FIXTURES CONNECTED TO A POTABLE WATER SYSTEM WITH HOSE CONNECTIONS ON THE OUTLET SIDE AND OWNER FURNISHED EQUIPMENT WITH DIRECT CONNECTIONS, SHALL BE PROVIDED WITH BACKFLOW PREVENTION.

CLEAN AND DISINFECT WATER PIPING PER AWWA C651 OR C652 PROCEDURES.

ALL FIXTURES USE FOR HAND WASHING, SHOWERING AND OR ANY OTHER APPLICATION WHICH REQUIRES DISCHARGE WATER TO COME INTO CONTACT SHALL BE EQUIPPED WITH A THERMOSTATIC MIXING VALVE, WITH REGULATED MAXIMUM TEMPERATURE DOWN TO 110° F.

15420 – DRAINAGE AND VENT SYSTEMS
UNDERGROUND BUILDING DRAIN PIPE AND FITTINGS SHALL BE NO HUB ABS OR PVC PLASTIC PIPE AND FITTINGS PER ASTM D2661 WITH ASTM D2235 SOLVENT, OR ASTM A74 SERVICE WEIGHT, HUB AND SPIGOT CAST IRON SOIL PIPE, OR ASTM A888 (OR CISPI 301) HUBLESS CAST IRON SOIL PIPE WITH ASTM C564 HEAVY DUTY SHIELDED STAINLESS STEEL COUPLINGS.

ABOVE GROUND SANITARY DRAINAGE AND VENT PIPING, IN ALL AREAS EXCEPT AIR PLENUMS AND ANYWHERE IN A FIRED RATED BUILDING, SHALL BE ABS TYPE DWV PLASTIC PIPE AND FITTINGS PER ASTM D2661 WITH ASTM D2255 SOLVENT, OR PVC PLASTIC PIPE AND FITTINGS PER ASTM D2665 WITH ASTM D2564 SOLVENT, OR SERVICE WEIGHT, NO HUB CAST IRON COUPLED PIPE AND FITTINGS WITH COMPRESSION TYPE NEOPRENE GASKETS AND STAINLESS STEEL BANDS.

ALL SANITARY DRAINAGE AND VENT PIPING INSIDE AIR PLENUMS AND ANYWHERE IN A FIRE RATED BUILDING SHALL BE NO HUB SERVICE WEIGHT CAST IRON COUPLED PIPE AND FITTINGS WITH COMPRESSION TYPE NEOPRENE GASKETS AND STAINLESS STEEL BANDS. ASTM B306 COPPER PIPE MAY BE USED WITH SOLDERED JOINTS FOR PIPE 3" AND SMALLER.

INSTALL SANITARY DRAIN LINES 2-1/2" AND LESS WITH A SLOPE OF 2%. INSTALL SANITARY DRAIN LINES 3"-6" WITH A SLOPE OF NOT LESS THAN 1%.

15440 – PLUMBING FIXTURES
PROVIDE AND INSTALL CARRIERS AS REQUIRED FOR FLOOR OR WALL MOUNTED PLUMBING FIXTURES. INSTALL ALL FIXTURES WITH ACCESSORIES AS REQUIRED TO PROVIDE A COMPLETE, WORKABLE INSTALLATION.

PLUMBING FIXTURES SHALL INCLUDE COMPRESSION STOPS ABOVE FLOOR IN SUPPLIES TO ALL FIXTURES AND A MINIMUM 17 GAUGE P-TRAP.

ALL LAVATORIES AND HAND SINKS WILL HAVE A COMBINATION FAUCET OR PREMIXING FAUCET CAPABLE OF SUPPLYING WARM WATER FOR A MINIMUM OF 10 SECONDS.

ALL JANITORIAL SINK FAUCETS MUST BE PROVIDED WITH AN APPROVED BACKFLOW PREVENTION DEVICE.

SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF FLOOR DRAINS AND FLOOR SINKS.

SECTION 02510 – WATER SYSTEMS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. THIS SECTION INCLUDES WATER SYSTEMS PIPING FOR POTABLE WATER SERVICE AS FOLLOWS:
1. WATER SERVICE TO 5 FEET OUTSIDE THE BUILDING.
B. RELATED SECTIONS: THE FOLLOWING SECTIONS CONTAIN REQUIREMENTS THAT RELATE TO THIS SECTION:
1. DIVISION 2 SECTION "EARTHWORK" FOR EXCAVATION, TRENCHING AND BACKFILL OF TRENCHES.
2. DIVISION 15 SECTIONS FOR WATER DISTRIBUTION SYSTEMS INSIDE BUILDING.

1.3 SYSTEM PERFORMANCE REQUIREMENTS
A. MINIMUM WORKING PRESSURE RATINGS: EXCEPT WHERE OTHERWISE INDICATED, THE FOLLOWING ARE MINIMUM PRESSURE REQUIREMENTS FOR WATER SYSTEM PIPING.
1. UNDERGROUND PIPING: 150 PSIG (1035 KPA).

1.4 SUBMITTALS
A. GENERAL: SUBMIT THE FOLLOWING ACCORDING TO CONDITIONS OF THE CONTRACT AND DIVISION 1 SPECIFICATION SECTIONS.
B. PRODUCT DATA, INCLUDING PRESSURE RATING, RATED CAPACITY, AND SETTINGS OF SELECTED MODELS FOR THE FOLLOWING:
1. VALVES.
2. IDENTIFICATION MATERIALS AND DEVICES.
C. RECORD DRAWINGS AT PROJECT CLOSEOUT OF INSTALLED WATER SYSTEM PIPING AND PRODUCTS ACCORDING TO DIVISION 1 SECTION "PROJECT CLOSEOUT."
D. TEST REPORTS SPECIFIED IN "FIELD QUALITY CONTROL" ARTICLE IN PART 3.
E. MAINTENANCE DATA FOR INCLUSION IN "OPERATING AND MAINTENANCE MANUAL" SPECIFIED IN DIVISION 1 SECTION "PROJECT CLOSEOUT." INCLUDE DATA FOR THE FOLLOWING:
1. VALVES.

1.5 COORDINATION DRAWINGS
A. COORDINATION DRAWINGS SHOWING PIPE SIZES AND VALVES, METER AND SPECIALTY LOCATIONS AND ELEVATIONS. INCLUDE DETAILS OF UNDERGROUND STRUCTURES, CONNECTIONS, ANCHORS, AND REACTION BACKING. SHOW OTHER PIPING IN SAME TRENCH AND CLEARANCES FROM WATER SYSTEM PIPING. INDICATE INTERFACE AND SPATIAL RELATIONSHIP BETWEEN PIPING AND PROXIMATE STRUCTURES. DO NOT SUBMIT. RETAIN AT JOB SITE.

1.6 QUALITY ASSURANCE
A. COMPLY WITH REQUIREMENTS OF UTILITY SUPPLYING WATER. INCLUDE TAPPING OF WATER MAINS, BACKFLOW PREVENTION, WATER METER AND METER VAULTS.
B. COMPLY WITH STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR POTABLE WATER PIPING AND PLUMBING SYSTEMS. INCLUDE MATERIALS, INSTALLATION, TESTING, AND DISINFECTION.
C. PROVIDE LISTING/APPROVAL STAMP, LABEL, OR OTHER MARKING ON EQUIPMENT MADE TO SPECIFIED STANDARDS.
D. LISTING AND LABELING: PROVIDE EQUIPMENT AND ACCESSORIES THAT ARE LISTED AND LABELED.
1. THE TERMS "LISTED" AND "LABELED": AS DEFINED IN "NATIONAL ELECTRICAL CODE," ARTICLE 100.

1.7 DELIVERY, STORAGE, AND HANDLING
A. PREPARATION FOR TRANSPORT: PREPARE VALVES, INCLUDING FIRE HYDRANTS, FOR SHIPPING AS FOLLOWS:
1. ENSURE THAT VALVES ARE DRY AND INTERNALLY PROTECTED AGAINST RUST AND CORROSION.
2. PROTECT VALVES AGAINST DAMAGE TO THREADED ENDS, FLANGE FACES, AND WELD ENDS.
3. SET VALVES IN BEST POSITION FOR HANDLING. SET VALVES CLOSED TO PREVENT RATTLING.
B. STORAGE: USE THE FOLLOWING PRECAUTIONS FOR VALVES DURING STORAGE:
1. DO NOT REMOVE END PROTECTORS UNLESS NECESSARY FOR INSPECTION; THEN REINSTALL FOR STORAGE.
2. PROTECT VALVES FROM WEATHER. STORE VALVES INDOORS AND MAINTAIN TEMPERATURE HIGHER THAN AMBIENT DEW POINT TEMPERATURE. SUPPORT VALVES OFF GROUND OR PAVEMENT IN WATERTIGHT ENCLOSURES WHEN OUTDOOR STORAGE IS NECESSARY.
C. HANDLING: USE SLING TO HANDLE VALVES WHOSE SIZE REQUIRES HANDLING BY CRANE OR LIFT. RIG VALVES TO AVOID DAMAGE TO EXPOSED VALVE PARTS. DO NOT USE HANDWHEELS OR STEMS AS LIFTING OR RIGGING points.
D. DELIVER PIPES AND TUBES WITH FACTORY-APPLIED END-CAPS. MAINTAIN END-CAPS THROUGH SHIPPING, STORAGE, AND HANDLING TO PREVENT PIPE-END DAMAGE AND TO PREVENT ENTRANCE OF DIRT, DEBRIS, AND MOISTURE.
E. PROTECT STORED PIPES AND TUBES FROM MOISTURE AND DIRT. ELEVATE ABOVE GRADE. DO NOT EXCEED STRUCTURAL CAPACITY OF FLOOR WHEN STORING INSIDE.
F. PROTECT FLANGES, FITTINGS, AND PIPING SPECIALTIES FROM MOISTURE AND DIRT.
G. STORE PLASTIC PIPES PROTECTED FROM DIRECT SUNLIGHT. SUPPORT TO PREVENT SAGGING AND BENDING.

1.8 PROJECT CONDITIONS
A. RESEARCH PUBLIC UTILITY RECORDS, AND VERIFY EXISTING UTILITY LOCATIONS. CONTACT UTILITY-LOCATING SERVICE FOR AREA WHERE PROJECT IS LOCATED.
B. VERIFY THAT WATER SYSTEM PIPING MAY BE INSTALLED IN COMPLIANCE WITH ORIGINAL DESIGN AND REFERENCED STANDARDS.

1.9 SEQUENCING AND SCHEDULING
A. COORDINATE CONNECTION TO WATER MAIN WITH UTILITY COMPANY.
B. COORDINATE WITH PIPE MATERIALS, SIZES, ENTRY LOCATIONS, AND PRESSURE REQUIREMENTS OF BUILDING WATER DISTRIBUTION SYSTEMS PIPING.
C. COORDINATE WITH OTHER UTILITY WORK.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. TAPPING VALVES:
A. CLOW VALVE CO. DIV., MCWANE, INC.
B. EAST JORDAN IRON WORKS, INC.
C. KENNEDY VALVE DIV., MCWANE, INC.
D. MUELLER CO., GRINNELL CORP.
E. U.S. PIPE & FOUNDRY CO.
2. GATE VALVES:
A. AMERICAN DARLING VALVE DIV., AMERICAN CAST IRON PIPE CO.
B. CLOW VALVE CO. DIV., MCWANE, INC.
C. EAST JORDAN IRON WORKS, INC.
D. PROD. GEM SPRINKLER CO. DIV., GRINNELL CORP.
E. HAMMOND VALVE CORP.
F. KENNEDY VALVE DIV., MCWANE, INC.
G. MILWAUKEE VALVE CO., INC.
H. MUELLER CO., GRINNELL CORP.
I. NIBCO, INC.
J. STOCKHAM VALVES & FITTINGS, INC.
K. U.S. PIPE & FOUNDRY CO.
L. WATEROUS CO.

2.2 PIPES AND TUBES
A. REFER TO PART 3 ARTICLE "PIPING APPLICATIONS" FOR IDENTIFICATION OF SYSTEMS WHERE PIPE AND TUBE MATERIALS SPECIFIED BELOW ARE USED.
B. DUCTILE-IRON PIPE: AWWA C151, CLASSES 150, 200, AND 250.
1. LINING: AWWA C104, CEMENT MORTAR, SEAL COATED.
2. GASKETS, GLANDS, AND BOLTS AND NUTS: AWWA C111.
3. PUSH-ON-JOINT-TYPE PIPE: AWWA C111, RUBBER GASKETS.
4. MECHANICAL-JOINT-TYPE PIPE: AWWA C111, RUBBER GASKETS, DUCTILE- OR CAST-IRON GLANDS, AND STEEL BOLTS AND NUTS.
5. ENCASEMENT: AWWA C105, POLYETHYLENE FILM TUBE.
C. COPPER TUBE: ASTM B 88, TYPE K (ASTM B 88M, TYPES A AND B), SEAMLESS WATER TUBE, ANNEALED TEMPER.
D. POLYVINYL CHLORIDE (PVC) PIPE: AWWA C900; CLASSES 150 AND 200; WITH BELL END AND ELASTOMERIC GASKET, WITH PLAIN END FOR CAST-IRON OR DUCTILE-IRON FITTINGS, OR WITH PLAIN END FOR PVC ELASTOMERIC GASKET FITTINGS.
1. PIPE MARKING: NSF 14, "NSF-PVC CTO ONLY."
2. GASKETS: ASTM F 477, ELASTOMERIC SEAL.

2.3 PIPE AND TUBE FITTINGS
A. REFER TO PART 3 ARTICLE "PIPING APPLICATIONS" FOR IDENTIFICATION OF SYSTEMS WHERE PIPE AND TUBE FITTING MATERIALS SPECIFIED BELOW ARE USED.
B. DUCTILE-IRON AND CAST-IRON PIPE FITTINGS: AWWA C110, DUCTILE-IRON OR CAST-IRON, 250-PSIG (1725 KPA) MINIMUM PRESSURE RATING; OR AWWA C153, DUCTILE-IRON COMPACT FITTINGS, 350-PSIG (2400 KPA) PRESSURE RATING.
1. LINING: AWWA C104, CEMENT MORTAR.
2. GASKETS: AWWA C111, RUBBER.
C. DUCTILE-IRON AND GRAY-IRON FLANGED FITTINGS: AWWA C110, 250-PSIG (1725 KPA) MINIMUM PRESSURE RATING, WITH AWWA C104 CEMENT-MORTAR LINING.
D. POLYETHYLENE ENCASEMENT: AWWA C105, 8-MILS (2 MM) MINIMUM THICKNESS, TUBE OR SHEET.
E. COPPER TUBE FITTINGS: ASME B16.22, WROUGHT-COPPER, SOLDER-JOINT PRESSURE TYPE.
F. POLYVINYL CHLORIDE (PVC) PIPE COUPLINGS AND FITTINGS: AWWA C900, WITH ASTM F 477 ELASTOMERIC SEAL GASKETS.

2.4 JOINING MATERIALS
A. REFER TO PART 3 ARTICLE "PIPING APPLICATIONS" FOR IDENTIFICATION OF SYSTEMS WHERE JOINING MATERIALS SPECIFIED BELOW ARE USED.
B. DUCTILE-IRON PIPE AND DUCTILE-IRON OR CAST-IRON FITTINGS: THE FOLLOWING MATERIALS APPLY:
1. PUSH-ON JOINTS: AWWA C111 RUBBER GASKETS AND LUBRICANT.
2. MECHANICAL JOINTS: AWWA C111 DUCTILE-IRON OR GRAY-IRON GLANDS, HIGH-STRENGTH STEEL BOLTS AND NUTS, AND RUBBER GASKETS.
3. FLANGED JOINTS: AWWA C115 DUCTILE-IRON OR GRAY-IRON PIPE FLANGES, RUBBER GASKETS, AND HIGH-STRENGTH STEEL BOLTS AND NUTS.
A. GASKETS: RUBBER, FLAT FACE, 1/8 INCH (3 MM) THICK EXCEPT WHERE OTHER THICKNESS IS INDICATED; AND FULL-FACE OR RING TYPE EXCEPT WHERE OTHER TYPE IS INDICATED.
B. FLANGE BOLTS AND NUTS: ASME B18.2.1, CARBON STEEL, EXCEPT WHERE OTHER MATERIAL IS INDICATED.
C. BRAZING FILLER METALS: AWS A5.8, BCUP (COPPER-PHOSPHORUS) SERIES.
D. PIPE COUPLINGS: IRON-BODY SLEEVE ASSEMBLY, FABRICATED TO MATCH OUTSIDE DIAMETERS OF PIPES TO BE JOINED.
1. SLEEVE: ASTM A 126, CLASS B, GRAY IRON.
2. FOLLOWERS: ASTM A 47, GRADE 32510, OR ASTM A 536 DUCTILE IRON. 3. GASKETS: RUBBER.
4. BOLTS AND NUTS: AWWA C111.
5. FINISH: ENAMEL PAINT.
6. ENCASEMENT: AWWA C105, POLYETHYLENE FILM TUBE OR SHEET.
E. PLASTIC PIPE FLANGE GASKET, BOLTS, AND NUTS: TYPE AND MATERIAL RECOMMENDED BY PIPING SYSTEM MANUFACTURER, EXCEPT WHERE OTHER TYPE OR MATERIAL IS INDICATED.

2.5 PIPING SPECIALTIES
A. DIELECTRIC FITTINGS: ASSEMBLY OR FITTING HAVING INSULATING MATERIAL ISOLATING JOINED DISSIMILAR METALS TO PREVENT GALVANIC ACTION AND CORROSION.
1. DESCRIPTION: COMBINATION OF COPPER ALLOY AND FERROUS; THREADED, SOLDER, PLAIN, AND WELD-NECK END TYPES AND MATCHING PIPING SYSTEM MATERIALS.
2. DIELECTRIC UNIONS: FACTORY-FABRICATED UNION ASSEMBLY, DESIGNED FOR 250-PSIG (1725 KPA) MINIMUM WORKING PRESSURE AT 180 DEG F (82 DEG C). INCLUDE INSULATING MATERIAL ISOLATING DISSIMILAR METALS AND ENDS WITH INSIDE THREADS ACCORDING TO ASME B1.20.1.
3. DIELECTRIC FLANGES: FACTORY-FABRICATED COMPANION-FLANGE ASSEMBLY, FOR 150-PSIG (1035 KPA) OR 300-PSIG (2070 KPA) MINIMUM PRESSURE TO SUIT SYSTEM PRESSURES.
4. DIELECTRIC-FLANGE INSULATION KITS: FIELD-ASSEMBLED COMPANION-FLANGE ASSEMBLY, FULL-FACE OR RING TYPE. COMPONENTS INCLUDE NEOPRENE OR PHENOLIC GASKET, PHENOLIC OR POLYETHYLENE BOLT SLEEVES, PHENOLIC WASHERS, AND STEEL BACKING WASHERS.
A. PROVIDE SEPARATE COMPANION FLANGES AND STEEL BOLTS AND NUTS FOR 150-PSIG (1035 KPA) OR 300-PSIG (2070 KPA) MINIMUM WORKING PRESSURE TO SUIT SYSTEM PRESSURES.
5. DIELECTRIC COUPLINGS: GALVANIZED-STEEL COUPLINGS HAVING INERT AND NONCORROSIVE THERMOPLASTIC LINING, WITH THREADED ENDS AND 300-PSIG (2070 KPA) MINIMUM WORKING PRESSURE AT 225 DEG F (107 DEG C).
6. DIELECTRIC NIPPLES: ELECTROPLATED STEEL NIPPLES HAVING INERT AND NONCORROSIVE THERMOPLASTIC LINING, WITH COMBINATION OF PLAIN, THREADED, OR GROOVED END TYPES AND 300-PSIG (2070 KPA) WORKING PRESSURE AT 225 DEG F (107 DEG C).

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BUILDING NAME:
RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:
HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS.
ISSUE DATE: JUNE, 2006
DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: 32M003.dwg
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SHEET TITLE
SPECIFICATIONS
SHEET NUMBER
M003

name: P:\2005\20050732\1Drawings\Sheet\32M003.dwg Last Plotted: 06/12/2006 @ 09:31 By: scm

2.6 VALVES
A. NONRISING STEM GATE VALVES 3 INCHES (80 MM) AND LARGER: AWWA C509, RESILIENT SEATED; BRONZE STEM, CAST–IRON OR DUCTILE–IRON BODY AND BONNET, STEM NUT, 200–PSIG (1380 KPA) WORKING PRESSURE, MECHANICAL JOINT ENDS.
B. VALVE BOXES: CAST–IRON BOX HAVING TOP SECTION AND COVER WITH LETTERING "WATER," BOTTOM SECTION WITH BASE OF SIZE TO FIT OVER VALVE AND BARREL APPROXIMATELY 5 INCHES (124 MM) IN DIAMETER, AND ADJUSTABLE CAST–IRON EXTENSION OF LENGTH REQUIRED FOR DEPTH OF BURY OF VALVE.
1. PROVIDE A STEEL TEE–HANDLE OPERATING WRENCH WITH EACH VALVE BOX. WRENCH SHALL HAVE TEE HANDLE WITH ONE POINTED END, STEM OF LENGTH TO OPERATE VALVE, AND SOCKET–FITTING VALVE–OPERATING NUT.
C. TAPPING SLEEVE AND TAPPING VALVE: COMPLETE ASSEMBLY, INCLUDING TAPPING SLEEVE, TAPPING VALVE, AND BOLTS AND NUTS. USE SLEEVE AND VALVE COMPATIBLE WITH TAPPING MACHINE. COORDINATE REQUIREMENTS WITH UTILITY PROVIDING WATERS.
1. TAPPING SLEEVE: CAST–IRON OR DUCTILE–IRON 2–PIECE BOLTED SLEEVE WITH FLANGED OUTLET FOR NEW BRANCH CONNECTION. SLEEVE MAY HAVE MECHANICAL JOINT ENDS WITH RUBBER GASKETS OR SEALING RINGS IN SLEEVE BODY. USE SLEEVE THAT MATES WITH SIZE AND TYPE PIPE MATERIAL BEING TAPPED. OUTLET FLANGE SHALL BE SIZE REQUIRED FOR BRANCH CONNECTION.

2.7 ANCHORAGES
A. CLAMPS, STRAPS, AND WASHERS: ASTM A 506, STEEL.
B. RODS: ASTM A 575, STEEL.
C. ROD COUPLINGS: ASTM A 197, MALLEABLE IRON.
D. BOLTS: ASTM A 307, STEEL.
E. CAST–IRON WASHERS: ASTM A 126, GRAY IRON.
F. CONCRETE REACTION BACKING: PORTLAND CEMENT CONCRETE MIX, 3000 PSI (20.7 MPA).
1. CEMENT: ASTM C 150, TYPE I.
2. FINE AGGREGATE: ASTM C 33, SAND.
3. COARSE AGGREGATE: ASTM C 33, CRUSHED GRAVEL.
4. WATER: POTABLE.

2.8 IDENTIFICATION
A. METALLIC–LINED PLASTIC UNDERGROUND WARNING TAPES: POLYETHYLENE PLASTIC TAPE WITH METALLIC CORE, 6 INCHES (150 MM) WIDE BY 4 MILS (1 MM) THICK, SOLID BLUE IN COLOR WITH CONTINUOUSLY PRINTED CAPTION IN BLACK LETTERS "CAUTION – WATER LINE BURIED BELOW."
B. NONMETALLIC PIPING LABEL: ENGRAVED PLASTIC–LAMINATE LABEL, FOR INSTALLATION ON MAIN ELECTRICAL METER PANEL; NOT LESS THAN 1 INCH (25 MM) BY 3 INCHES (75 MM), WITH CAPTION "CAUTION – THIS STRUCTURE HAS A NONMETALLIC WATER SERVICE."

PART 3 – EXECUTION

3.1 EARTHWORK
A. EXCAVATION, TRENCHING, AND BACKFILLING ARE SPECIFIED IN DIVISION 2 SECTION "EARTHWORK."

3.2 SERVICE ENTRANCE PIPING
A. EXTEND WATER SYSTEM PIPING AND CONNECT TO WATER SUPPLY SOURCE AND BUILDING WATER DISTRIBUTION SYSTEMS AT OUTSIDE FACE OF THE BUILDING WALL IN LOCATIONS AND PIPE SIZES INDICATED.
1. TERMINATE WATER SYSTEM PIPING AT BUILDING WALL AND TERMINATE FIRE PROTECTION SYSTEM AT FLANGE INSIDE BUILDING, UNTIL BUILDING WATER SYSTEMS ARE INSTALLED. TERMINATE PIPING WITH CAPS, PLUGS, OR FLANGES AS REQUIRED FOR PIPING MATERIAL. MAKE CONNECTIONS TO BUILDING WATER SYSTEMS WHEN THOSE SYSTEMS ARE INSTALLED.
B. WATER DISTRIBUTION SYSTEMS AND FIRE PROTECTION SYSTEMS ARE SPECIFIED IN DIVISION 15 SECTIONS. SLEEVES AND MECHANICAL SLEEVE SEALS ARE SPECIFIED IN DIVISION 15 SECTION "BASIC MECHANICAL MATERIALS AND METHODS."
C. INSTALL RESTRAINED JOINTS FOR BURIED PIPING WITHIN 5 FEET (1.5 M) OF BUILDING. USE RESTRAINED–JOINT PIPE AND FITTINGS, THRUST BLOCKS, ANCHORS, TIE–RODS AND CLAMPS, AND OTHER SUPPORTS AT VERTICAL AND HORIZONTAL OFFSETS.

3.3 PIPING APPLICATIONS
A. REFER TO PART 2 OF THIS SECTION FOR DETAILED SPECIFICATIONS FOR PIPE AND FITTINGS PRODUCTS LISTED BELOW. USE PIPE, TUBE, FITTINGS, AND JOINING METHODS ACCORDING TO THE FOLLOWING APPLICATIONS. PIPING IN PITS AND INSIDE BUILDING MAY BE JOINED WITH FLANGES OR COUPLINGS, INSTEAD OF JOINTS INDICATED, FOR GROOVED–END AWWA–SIZE PIPING.
B. USE PIPE, TUBE, FITTINGS, AND JOINING METHODS ACCORDING TO FOLLOWING APPLICATIONS.
1. 2 INCHES (50 MM) AND SMALLER: COPPER TUBE, TYPE K (TYPE A), COPPER TUBE FITTINGS, AND BRAZED JOINTS.
2. 2–1/2 INCHES (65 MM) TO 3–1/2 INCHES (90 MM): COPPER TUBE, TYPE K (TYPE A), COPPER TUBE FITTINGS, AND BRAZED JOINTS.
3. OPTION FOR 2–1/2 INCHES (65 MM) TO 3–1/2 INCHES (90 MM): 3–INCH (80 MM) OR 4–INCH (100 MM) SIZE, DUCTILE–IRON PIPE, DUCTILE–IRON OR GRAY–IRON FITTINGS OR DUCTILE–IRON COMPACT FITTINGS, AND PUSH–ON OR MECHANICAL JOINTS.
4. 4 INCHES (100 MM) TO 8 INCHES (200 MM): CLASS 250, DUCTILE–IRON PIPE, DUCTILE–IRON COMPACT FITTINGS, AND PUSH–ON OR MECHANICAL JOINTS.
5. 4 INCHES (100 MM) TO 8 INCHES (200 MM): AWWA C900, CLASS 200 POLYVINYL CHLORIDE (PVC) PLASTIC WATER PIPE, AWWA C900 PVC FITTINGS, AND GASKETED JOINTS.
6. 4 INCHES (100 MM) TO 8 INCHES (200 MM): AWWA C900, CLASS 200 POLYVINYL CHLORIDE (PVC) PLASTIC PIPE, AWWA C110 OR AWWA C153, CLASS 200 MINIMUM, DUCTILE–IRON OR GRAY–IRON FITTINGS, AND MECHANICAL OR PUSH–ON JOINTS.

3.4 VALVE APPLICATIONS
A. DRAWINGS INDICATE VALVE TYPES TO BE USED. WHERE SPECIFIC VALVE TYPES ARE NOT INDICATED, THE FOLLOWING REQUIREMENTS APPLY:
1. BURIED VALVES 3 INCHES (80 MM) AND LARGER: AWWA, GATE VALVES, NONRISING STEM, WITH VALVE BOX.

3.4 JOINT CONSTRUCTION
A. DUCTILE–IRON PIPING GASKETED JOINTS: CONSTRUCT JOINTS ACCORDING TO AWWA C600.
B. FLANGED JOINTS: ALIGN FLANGES AND INSTALL GASKETS. ASSEMBLE JOINTS BY SEQUENCING BOLT TIGHTENING. USE LUBRICANT ON BOLT THREADS.
C. COPPER TUBE AND FITTINGS, BRAZED JOINTS: CONSTRUCT JOINTS ACCORDING TO AWS "BRAZING MANUAL," CHAPTER "PIPE AND TUBE."
D. AWWA POLYVINYL CHLORIDE (PVC) PIPING GASKETED JOINTS: USE AWWA C900 JOINING MATERIALS. CONSTRUCT JOINTS WITH ELASTOMERIC SEALS AND LUBRICANT ACCORDING TO ASTM D 2774 OR ASTM D 3139 AND PIPE MANUFACTURER'S WRITTEN INSTRUCTIONS.
E. DISSIMILAR MATERIALS PIPING JOINTS: CONSTRUCT JOINTS USING ADAPTERS THAT ARE COMPATIBLE WITH BOTH PIPING MATERIALS, OUTSIDE DIAMETERS, AND SYSTEM WORKING PRESSURE. REFER TO "PIPING SYSTEMS – COMMON REQUIREMENTS" ARTICLE FOR JOINING PIPING OF DISSIMILAR METALS.

3.5 PIPING SYSTEMS – COMMON REQUIREMENTS
A. GENERAL LOCATIONS AND ARRANGEMENTS: DRAWINGS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING SYSTEMS. INDICATED LOCATIONS AND ARRANGEMENTS WERE USED TO SIZE PIPE AND CALCULATE FRICTION LOSS, EXPANSION, PUMP SIZING, AND OTHER DESIGN CONSIDERATIONS. INSTALL PIPING AS INDICATED EXCEPT WHERE DEVIATIONS TO LAYOUT ARE APPROVED ON COORDINATION DRAWINGS.
B. INSTALL COMPONENTS HAVING PRESSURE RATING EQUAL TO OR GREATER THAN SYSTEM OPERATING PRESSURE.
C. INSTALL PIPING FREE OF SAGS AND BENDS.
D. LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER, SPACED TO PERMIT VALVE SERVICING.
E. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
F. PIPING CONNECTIONS: EXCEPT AS OTHERWISE INDICATED, MAKE PIPING CONNECTIONS AS SPECIFIED BELOW.
1. INSTALL FLANGES, IN PIPING 2–1/2 INCHES (65 MM) AND LARGER, ADJACENT TO FLANGED VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT HAVING FLANGED PIPE CONNECTION.
2. INSTALL DIELECTRIC FITTINGS TO CONNECT PIPING OF DISSIMILAR METALS.

3.6 PIPING INSTALLATION
A. WATER MAIN CONNECTION: TAP WATER MAIN WITH SIZE AND IN LOCATION AS INDICATED ACCORDING TO REQUIREMENTS OF WATER UTILITY. COORDINATE EXACT REQUIREMENT WITH WATER UTILITY.
1. INSTALL TAPPING SLEEVE AND TAPPING VALVE ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. INSTALL TAPPING SLEEVE ON PIPE TO BE TAPPED. POSITION FLANGED OUTLET FOR GATE VALVE.
3. INSTALL GATE VALVE ONTO TAPPING SLEEVE. COMPLY WITH AWWA C600. INSTALL VALVE WITH STEM POINTING UP AND WITH CAST–IRON VALVE box.
4. USE TAPPING MACHINE COMPATIBLE WITH VALVE AND TAPPING SLEEVE; CUT HOLE IN MAIN. REMOVE TAPPING MACHINE AND CONNECT WATER SERVICE PIPING.
B., COMPLY WITH REQUIREMENTS OF NFPA 24 FOR MATERIALS AND INSTALLATION.
C. INSTALL DUCTILE–IRON PIPE AND DUCTILE–IRON AND CAST–IRON FITTINGS ACCORDING TO AWWA C600.
1. INSTALL POLYETHYLENE ENCASEMENT ACCORDING TO AWWA C105 ON DUCTILE–IRON PIPE, DUCTILE–IRON AND CAST–IRON PIPE FITTINGS, AND FERROUS COUPLINGS WHERE SPECIFIED.
D. INSTALL COPPER TUBE AND WROUGHT–COPPER FITTINGS ACCORDING TO CDA NO. 404/0 "COPPER TUBE HANDBOOK."
E. INSTALL AWWA POLYVINYL CHLORIDE (PVC) PLASTIC PIPE ACCORDING TO AWWA M23.
F. BURY PIPING AT MINIMUM DEPTH OF 36 INCHES (1 M) BELOW FINISHED GRADE AND NOT LESS THAN 18 INCHES (0.5 M) BELOW AVERAGE LOCAL FROST DEPTH.
G. TUNNELING: INSTALL PIPE UNDER STREETS OR OTHER OBSTRUCTIONS THAT CANNOT BE DISTURBED BY TUNNELING, JACKING, OR A COMBINATION OF BOTH.

3.7 ANCHORAGE INSTALLATION
A. ANCHORAGES: INSTALL ANCHORAGES FOR TEES, PLUGS AND CAPS, BENDS, CROSSES, VALVES, AND HYDRANT BRANCHES. INCLUDE ANCHORAGES FOR THE FOLLOWING PIPING SYSTEMS:
1. GASKETED–JOINT, DUCTILE–IRON PIPING: ACCORDING TO AWWA C600.
2. GASKETED–JOINT, POLYVINYL CHLORIDE (PVC) PIPING: ACCORDING TO AWWA M23.

3.8 VALVE INSTALLATION
A. GENERAL APPLICATION: USE MECHANICAL–JOINT–END VALVES FOR 3–INCH (80 MM) AND LARGER BURIED INSTALLATION. USE THREADED–AND FLANGED–END VALVES FOR INSTALLATION IN PITS AND INSIDE BUILDING. USE NONRISING STEM UL/FM GATE VALVES FOR INSTALLATION WITH INDICATOR POSTS. USE BRONZE CORPORATION STOPS AND VALVES, WITH ENDS COMPATIBLE WITH PIPING, FOR 2–INCH (50 MM) AND SMALLER INSTALLATION.
B. AWWA–TYPE GATE VALVES: COMPLY WITH AWWA C600. INSTALL BURIED VALVES WITH STEM POINTING UP AND WITH CAST–IRON VALVE BOX.

3.9 IDENTIFICATION INSTALLATION
A. INSTALL CONTINUOUS PLASTIC UNDERGROUND WARNING TAPE DURING BACK–FILLING OF TRENCH FOR UNDERGROUND WATER SERVICE PIPING. LOCATE 6 INCHES (150 MM) TO 8 INCHES (200 MM) BELOW FINISHED GRADE, DIRECTLY OVER PIPING.
B. ATTACH NONMETALLIC PIPING LABEL PERMANENTLY TO MAIN ELECTRICAL METER PANEL.

3.10 FIELD QUALITY CONTROL
A. DO NOT ENCLOSE, COVER, OR PUT INTO OPERATION WATER DISTRIBUTION PIPING SYSTEM UNTIL IT HAS BEEN INSPECTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
B. PIPING TESTS: CONDUCT PIPING TESTS BEFORE JOINTS ARE COVERED AND AFTER THRUST BLOCKS HAVE HARDENED SUFFICIENTLY. FILL PIPELINE 24 HOURS PRIOR TO TESTING AND APPLY TEST PRESSURE TO STABILIZE SYSTEM. USE ONLY POTABLE WATER.
C. HYDROSTATIC TESTS: TEST AT NOT LESS THAN 1–1/2 TIMES WORKING PRESSURE OR 200 PSI MINIMUM FOR 2 HOURS.
1. INCREASE PRESSURE IN 50–PSIG (350 KPA) INCREMENTS AND INSPECT EACH JOINT BETWEEN INCREMENTS. HOLD AT TEST PRESSURE FOR 1 HOUR; DECREASE TO 0 PSIG (0 KPA). SLOWLY INCREASE AGAIN TO TEST PRESSURE AND HOLD FOR 1 MORE HOUR. MAXIMUM ALLOWABLE LEAKAGE IS 2 QUARTS (1.89 L) PER HOUR PER 100 JOINTS. REMAKE LEAKING JOINTS WITH NEW MATERIALS AND REPEAT TEST UNTIL LEAKAGE IS WITHIN ABOVE LIMITS.

3.11 CLEANING
A. CLEAN AND DISINFECT WATER DISTRIBUTION PIPING AS FOLLOWS:
1. PURGE NEW WATER DISTRIBUTION PIPING SYSTEMS AND PARTS OF EXISTING SYSTEMS THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED PRIOR TO USE.
2. USE PURGING AND DISINFECTING PROCEDURE PRESCRIBED BY AUTHORITY HAVING JURISDICTION OR, IF METHOD IS NOT PRESCRIBED BY THAT AUTHORITY, USE PROCEDURE DESCRIBED IN AWWA C651 OR AS DESCRIBED BELOW:
A. COMPLY WITH NFPA 24 FOR FLUSHING OF PIPING. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT POINTS OF OUTLET.
B. FILL SYSTEM OR PART OF SYSTEM WITH WATER/CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE. ISOLATE (VALVE OFF) SYSTEM OR PART THEREOF AND ALLOW TO STAND FOR 24 HOURS.
C. DRAIN SYSTEM OR PART OF SYSTEM OF PREVIOUS SOLUTION AND REFILL WITH WATER/CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION OF CHLORINE; ISOLATE AND ALLOW TO STAND FOR 3 HOURS.
D. FOLLOWING ALLOWED STANDING TIME, FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL CHLORINE DOES NOT REMAIN IN WATER COMING FROM SYSTEM.
E. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITY HAVING JURISDICTION. REPEAT PROCEDURE IF BIOLOGICAL EXAMINATION MADE BY AUTHORITY SHOWS EVIDENCE OF CONTAMINATION.
B. PREPARE REPORTS FOR PURGING AND DISINFECTING ACTIVITIES.

END OF SECTION 02510

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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

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SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

M004

SHEET 24 OF 31

Registered Professional Engineer
NEIL H. SPENCER
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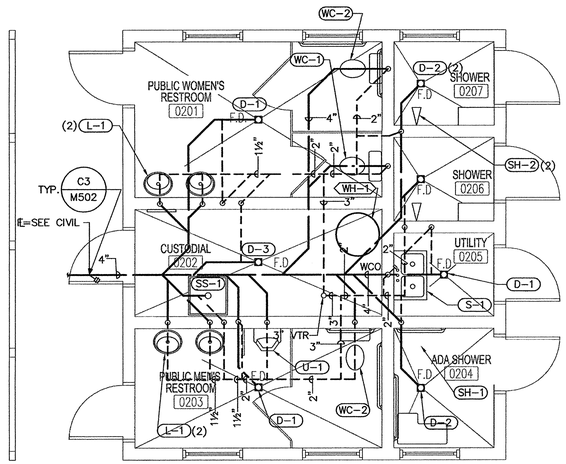

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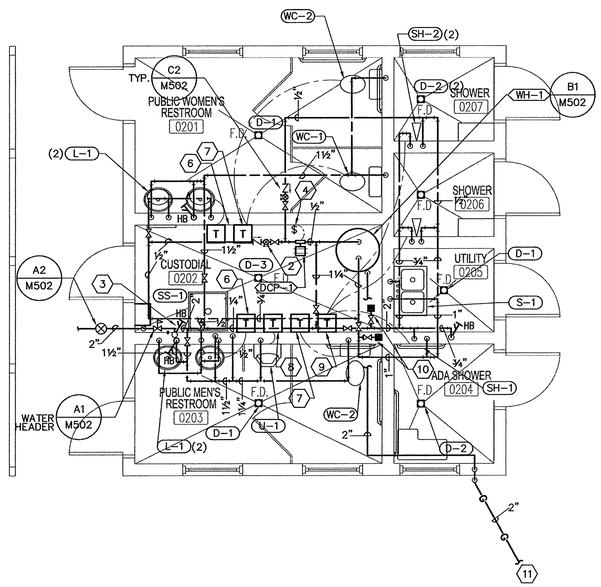
PLAN NORTH

C1 RESTROOM WASTE & VENT PIPING PLAN

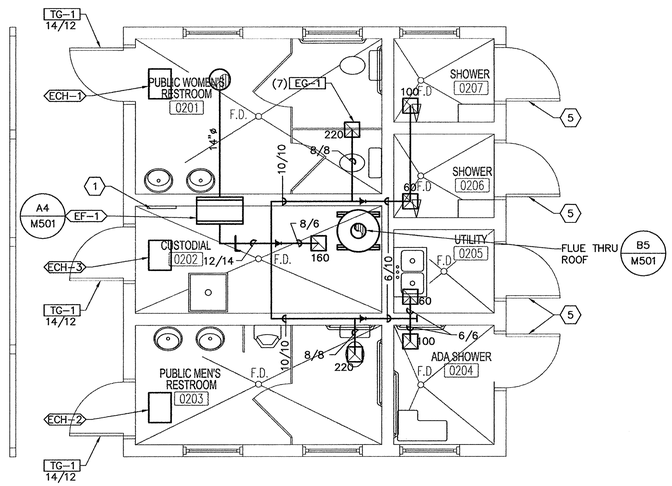
M101 SCALE: 1/4" = 1'-0"



PLAN NORTH

A1 RESTROOM DOMESTIC WATER PIPING PLAN

M101 SCALE: 1/4" = 1'-0"



PLAN NORTH

A3 RESTROOM HVAC PLAN

M101 SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. ALL DUCTWORK IN FREE STANDING REST ROOM BUILDING SHALL BE UNLINED.
2. ALL DIFFUSERS AND GRILLES IN FREE STANDING REST ROOM BUILDING SHALL BE BALANCED BY OPPOSED BLADE DAMPERS ON GRILLES.
3. EXTEND DUCT THRU JOIST WEBBING AS NECESSARY. DUCT SIZES SHOWN WERE SIZED TO FIT THRU PREDICTED STRUCTURAL WEBBING SIZES. ACTUAL STRUCTURAL WEBBING MAY DIFFER. RE-SIZE & RELOCATE DUCT AS NECESSARY TO FIT THRU ACTUAL STRUCTURAL WEBBING. COORDINATE DIMENSIONS WITH ASSOCIATED TRADES PRIOR TO SUBMITTING AND/OR PURCHASING DUCTWORK. ALL COORDINATION & CHANGES SHALL BE REFLECTED IN SHEET METAL & PLUMBING SHOP DRAWINGS. SUPPLY DUCT SHALL BE SIZED FOR 0.1" W.G./100FT. RETURN 0.08"W.G./100FT.
4. ALL EQUIPMENT HAS BEEN SHOWN TO COORDINATE WITH PREDICTED STRUCTURE. RELOCATE AS REQUIRED TO FIT IN ACTUAL TRUSS SPACE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR A COMPLETE AND OPERABLE SYSTEM. PIPING IS SCHEMATIC AND DOES NOT SHOW ALL ELBOWS ON DRAWING. ALL PIPING SHALL BE COORDINATED WITH DUCTWORK AND OTHER TRADES PRIOR TO INSTALLATION.
6. SEE SITE UTILITIES FOR CONTINUATION OF ALL UNDERGROUND PIPING 5 FEET FROM THE BUILDING.
7. ALL PIPING AND VALVES SHALL BE INSTALLED UNDER CEILING IN CUSTODIAL 0202 FOR ACCESS. PIPING SERVING ALL OTHER AREAS OF THE BUILDING SHALL RISE UP INTO THE ATTIC SPACE.
8. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS IN MECHANICAL ROOMS.
9. BALANCE EXHAUST CFM'S WITH INTEGRAL GRILLE O.B.D.'S.

SHEET KEYNOTES

1. DO NOT ROUTE DUCTWORK OR PIPING ABOVE ELECTRICAL PANEL.
2. BALANCE FLOW SETTER TO 0.5 GPM.
3. 3/4" LINE WITH SHUT-OFF VALVE TO HOSE BIBB.
4. DOMESTIC CIRCULATING PUMP TIMER. SEE DCP SCHEDULE.
5. 1" UNDERCUT. SEE ARCHITECTURAL PLANS.
6. LAVATORY TRANSFORMER SERVES (2) FAUCETS.
7. WATER CLOSET TRANSFORMER SERVES EVERY WATER CLOSET IN RESTROOM.
8. URINAL TRANSFORMER.
9. SHOWER TRANSFORMER SERVES THREE SHOWERS.
10. INSTALL COMPRESSED AIR QUICK CONNECT BLOW DOWN VALVES SIMILAR AS SHOWN ON DETAIL A1/M502, JUST DOWNSTREAM OF SHOWER ISOLATION VALVES. LOCATE IN CUSTODIAL ROOM FOR CONVENIENT ACCESS.
11. 4 OZ GAS LINE. SEE SITE UTILITIES FOR CONTINUATION. APPROXIMATELY 260 LINEAL FEET.

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SHEET TITLE

MECHANICAL PLANS

SHEET NUMBER

M101

SHEET 25 OF 31

Registered Professional Engineer — NEIL H. SPENCER No. 5484 — For Neil Spencer 6/12/06 — State of Utah

REGISTER AND GRILLE SCHEDULE

DESIGNATION	DESCRIPTION	SIZE	MAX. CFM	MAX. N.C.
TG-1	DOOR MOUNTED MAKE-UP AIR GRILLE. FRAME SHALL BE FOR DOOR MOUNTING W/ BF BORDER STYLE. MODEL SHALL BE PRICE ST61 HEAVY DUTY STEEL CONSTRUCTION. COORDINATE FINISH & COLOR WITH ARCHITECT.			
EG-1	PERFORATED FACE CEILING EXHAUST AIR UNIT, WITH O.B.D., REMOVABLE FACE AND CORE. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24" x 12", OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. EXHAUST UNITS SHALL BE PRICE MODEL PDDR. BALANCE EXHAUST WITH O.B.D.'S	10 x 10 12 x 12 14 x 14 15 x 15	350 500 680 780	20

ELECTRIC CABINET UNIT HEATER SCHEDULE

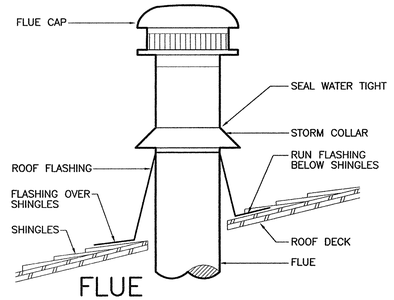
SYMBOL	MANUFACTURER & MODEL NUMBER	MOUNTING ARRANGEMENT	HTG. CAPACITY KW	HTG. CAPACITY MBH	CFM @ HIGH SPEED	FLA	VOLTS/ PHASE/ CYCLES	COMMENTS
ECH-1	MARKEL H3387D-RP	CEILING RECESSED	4.8	16.3	175	20.0	240/1/60	(1) (2)
ECH-2	MARKEL H3387D-RP	CEILING RECESSED	4.8	16.3	175	20.0	240/1/60	(1) (2)
ECH-3	MARKEL H3385D-RP	CEILING RECESSED	3.0	7.7	175	12.5	240/1/60	(1) (2)

(1) UNIT COMPLETE WITH INTEGRAL VANDAL PROOF LOCKING THERMOSTAT.
(2) UNIT COMPLETE WITH INTEGRAL STARTER & DISCONNECT.

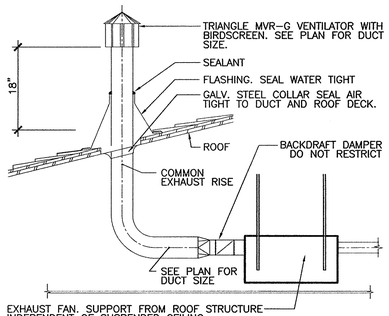
EXHAUST FAN SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CFM	STATIC PRESSURE IN. WG.	H.P.	RPM	VOLTS/PHASE/CYCLE	AREA SERVED	COMMENTS
EF-1	LOREN-COOK	QN 920	850	0.4	0.5	782	115/1/60	TOILET ROOM	(1)(2)(3)(4)

(1) ALL CAPACITIES AT 4800 FT. ELEVATION.
(2) DIRECT DRIVE CEILING EXHAUST FAN WITH INTEGRAL SPEED CONTROL. PROVIDE GRAVITY BACKDRAFT DAMPER, INTEGRAL THERMAL OVERLOAD PROTECTION AND DISCONNECT.
(3) CONTROL: COMPLETE WITH 7-DAY PROGRAMMABLE TIMER CONTROL. INSTALL IN CUSTODIAL ROOM.
(4) EQUIPPED WITH INTEGRAL FAN SPEED CONTROL.



B5 FLUE PENETRATION DETAIL
SCALE: NOT TO SCALE



A4 CEILING EXHAUST FAN
SCALE: NOT TO SCALE

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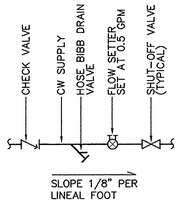
DETAILS

SHEET NUMBER

M501

SHEET 26 OF 31

Registered Professional Engineer — NEIL H. SPENCER No. 5484 — 6/12/06 — State of Utah



C2 CHECK VALVE DETAIL
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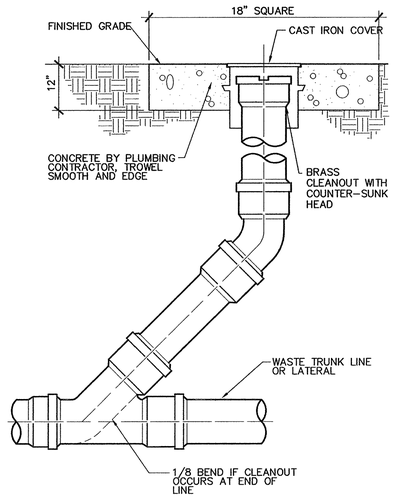
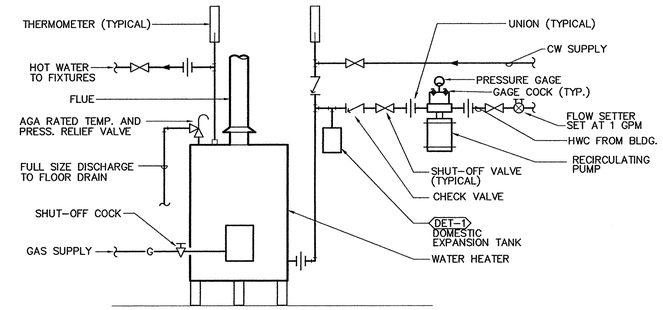
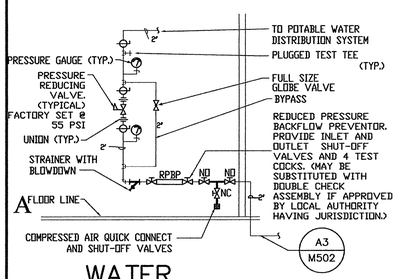


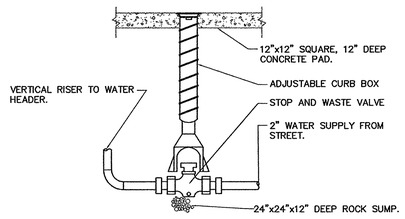
C3 CLEANOUT TO GRADE DETAIL
SCALE: NOT TO SCALE



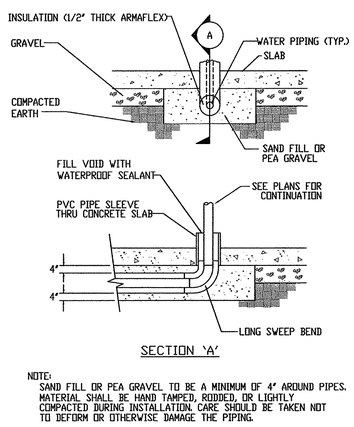
B1 WATER HEATER DETAIL
SCALE: NOT TO SCALE



A1 WATER PRESSURE REDUCING VALVE STATION
SCALE: NOT TO SCALE



A2 STOP & WASTE VALVE DETAIL
SCALE: NOT TO SCALE



A3 UNDER-SLAB WATER PIPING
SCALE: NOT TO SCALE

GAS FIRED DOMESTIC HOT WATER HEATER SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	TANK CAPACITY GALLONS	FUEL TYPE	INPUT MBH (1)	HP	VOLTS/ PHASE/ CYCLE	RECOVERY RATE GPH (1)	WATER TEMP IN/OUT	STACK SIZE	COMMENTS	
WH-1	AMERICAN DCG 3280T250-GP	80	NATURAL GAS	235/179	-/	-	228/173	45/140	6"	(2)	B1 ME507

(1) 0 FT. ELEVATION/ 6000 FT. ELEVATION.
(2) SET TEMPERATURE AT 140°.

DOMESTIC WATER CIRCULATE PUMP SCHEDULE

SYMBOL	MANUFACTURER & MODEL NO.	GPM	HEAD FT.	H.P.	RPM	VOLTS/PHASE/ CYCLE	AREA SERVED	COMMENTS
DCP-1	GRUNDFOS UP15-18SF	1	7.0	1/25	1750	120/1/60	SHOWERS LAVATORIES	(1)(2)

(1) ALL BRONZE CONSTRUCTION.
(2) EQUIPPED WITH 24 HOUR, 7 DAY PROGRAMMABLE TIMER.

DOMESTIC HOT WATER EXPANSION TANK

SYMBOL	MANUFACTURERS	MODEL NO.	GALLONS ACCEPTANCE VOLUME	GALLONS TOTAL VOLUME	INITIAL FILL PRESSURE
DET-1	AMTROL	ST-12-C	0.5	6.4	125

PLUMBING FIXTURE SCHEDULE

FIX. NO.	FIXTURE	WASTE	TRAP	VENT	HW	CW	NOTES
WC-1	WATER CLOSET	4"	-	2"	-	1"	FLOOR MOUNTED, FLUSH VALVE
WC-2	WATER CLOSET (ADA)	4"	-	2"	-	1"	FLOOR MOUNTED, FLUSH VALVE
L-1	LAVATORY (ADA)	1½"	1¼"	1½"	½"	½"	COUNTER MOUNTED, INFRA RED
U-1	URINAL (ADA)	2"	-	1½"	-	¾"	WALL HUNG
S-1	SINK	1½"	1¼"	1½"	½"	½"	STAINLESS SCULLERY
SS-1	JANITOR SINK	3"	3"	1½"	½"	½"	FLOOR MOUNTED
SH-1	SHOWER	-	-	-	½"	½"	ACCESSIBLE, SLIDE BAR HANDLE
SH-2	SHOWER	-	-	-	½"	½"	FIXED HEAD
D-1	FLOOR DRAIN	2"	2"	1½"	-	-	RESTROOMS
D-2	FLOOR DRAIN	2"	2"	1½"	-	-	SHOWER
D-3	FLOOR DRAIN	4"	4"	2"	-	-	MECHANICAL

WC-1 WATER CLOSET: PROFLO MODEL PF1701-1.6 FLOOR MOUNTED BOTTOM OUTLET VITREOUS CHINA CLOSE-COUPLED SIPHON JET ELONGATED TOILET WITH (2) BOLT CAPS WITH WING NUTS. 12" ROUGHING-IN; SLOAN 111-ES-S 1.6 GALLON FLUSH VALVE. SLOAN EL-154 TRANSFORMER CAPABLE OF SERVING UP TO 10 WATER CLOSETS EACH. BEMIS 1955C OPEN FRONT PLASTIC SEAT WITH INTEGRAL CHECK HINGES.

WC-2 ACCESSIBLE WATER CLOSET: PROFLO MODEL PF1703-1.6 FLOOR MOUNTED BOTTOM OUTLET VITREOUS CHINA CLOSE-COUPLED SOPHON JET ELONGATED TOILET WITH (2) BOT CAPS WITH WING NUTS. 12" ROUGHING-IN; SLOAN 111-ES-S 1.6 GALLON FLUSH VALVE. SLOAN EL-154 TRANSFORMER CAPABLE OF SERVING UP TO 10 WATER CLOSETS EACH. BEMIS 1955C OPEN FRONT PLASTIC SEAT WITH INTEGRAL CHECK HINGES.

L-1 LAVATORY: PENNINGTON SELF RIMMING VITREOUS CHINA OVAL, LAVATORY WITH 4" FAUCET CENTERS, K-7715 OPEN GRID STRAINER, 3/8" ANGLE SUPPLY STOPS; 1-1/4" CAST BRASS CHROME P-TRAP, PROVIDE HORIZONTAL TAILPIECE FROM FIXTURE TO WALL. INSTALL P-TRAP TIGHT TO WALL. SLOAN ETF-80-A; 0.5 GPM VANDAL RESISTANT. ELECTRONIC HAND WASHING FAUCET; CHROME PLATED BRASS; 4" CENTER-SET; BDT BELOW DECK VANDAL RESISTANT THERMOSTATIC MIXING VALVE; EL-248-40 120 VAC/24 VAC TRANSFORMER CAPABLE OF OPERATING QTY(2) FAUCETS.

U-1 ACCESSIBLE URINAL: PROFLO MODEL PF1810-1.0-3/4" VITREOUS CHINA SOPHON JET, WALL HUNG URINAL, 3/4" TOP SPUD INLET; 2" I.P.S. OUTLET; SLOAN 186-1.0 ES-S SENSOR OPERATED URINAL FLUSHOMETER; EL154 120 VAC/24 VAC TRANSFORMER.

S-1 COUNTER SINK: (2) COMPARTMENT SINK: ELKAY LR3319 18 GA. TYPE 302 STAINLESS STEEL (2) COMPARTMENT SINK; 33" X 19" X 8" DEEP; SELF RIMMING; (3) FAUCET HOLES ON 4" CENTERS; (2) LK-35 DUO STRAINER; MOEN CHATEAU MODEL 67425 KITCHEN FAUCET WITH SINGLE LIFT HANDLE AND VANDAL RESISTANT AERATOR.

SS-1 MOP SINK: PROFLO MODEL PFMB260024 MOP SINK; 24" X 24" X 10" HIGHWITH PLAIN CURB. MOP SINK SHALL BE ONE PIECE MOLDED COMPOSITE BASIN WITH PVC DRAIN BODY AND STAINLESS STEEL DOME STRAINER/LINT BASKET. FIAT MODEL 830AA SERVICE SINK FAUCET WITH HEAVY DUTY FITTING WITH 1/2" INLETS, 8" CENTER TO CENTER WITH ADJUSTABLE, THREADED FLANGES; EQUIPPED WITH INTEGRAL STOPS, FOUR-ARM HANDLES, THREAD ON OUTLET, CHROME PLATE; EQUIPPED WITH 30" RUBBER HOSE ON SPOUT OUTLET AND CHROME PLATED WALL HOOK.

SH-1 ACCESSIBLE SHOWER VALVE: BRADLEY WS-1WCA-ADA COVERALL 304 STAINLESS PRE ASSEMBLED WALL SHOWER UNIT WITH CONCEALED PIPING, 1/2" INLETS, 1/2" TOP OUTLET, 1/2" CHROME PLATED METAL CONSTRUCTION, TMV THERMOSTATIC MIXING VALVE WITH INTEGRAL CHECK-STOPS, TT TOUCH TIME METERING VALVE AND ASSOCIATED 24V TRANSFORMER; HOSE BRACKET; HAND-HELD SHOWER SPRAY CONSTRUCTION OF 1/2" NPT 60" STAINLESS STEEL HOSE WITH IN-LINE BACKFLOW PREVENTER AND QUICK DISCONNECT: 2.0 GPM ALL EXPOSED PARTS STAINLESS STEEL OR CHROMIUM PLATED.

SH-2 SHOWER VALVE: BRADLEY WS-1WCA COVERALL 304 STAINLESS PRE ASSEMBLED WALL SHOWER UNIT WITH CONCEALED PIPING, 1/2" INLETS, 1/2" TOP OUTLET, 1/2" CHROME PLATED METAL CONSTRUCTION, TMV THERMOSTATIC MIXING VALVE WITH INTEGRAL CHECK-STOPS, TT TOUCH TIME METERING VALVE AND ASSOCIATED 24V TRANSFORMER; SX SEVERE SERVICE SHOWER HEAD; FLOW RATE: 2.0 GPM ALL EXPOSED PARTS STAINLESS STEEL OR CHROMIUM PLATED.

D-1 FLOOR DRAIN: SMITH FIGURE 2005 CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND SQUARE NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE, AND TRAP PRIMER CONNECTION.

D-2 SHOWER DRAIN: SMITH FIGURE 2005 - A OR B CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE. PROVIDE SQUARE STRAINERS IN FLOORS WITH SQUARE PATTERNS, PROVIDE ROUND STRAINERS ELSEWHERE. PROVIDE AND INSTALL 40 MIL VINYL SHOWER PAN LINER. LINER SHALL BE 30" SQUARE.

D-3 MECHANICAL DRAIN: SMITH FIGURE 2005 CAST IRON BODY AND FLASHING COLLAR WITH PROTECTIVE CAP AND SQUARE NICKEL BRONZE ADJUSTABLE STRAINER HEAD WITH SECURED SQUARE HOLE GRATE, AND TRAP PRIMER CONNECTION.

State of Utah
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Division of Facilities Construction & Management
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BUILDING NAME:

RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:

HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE: 32M502.dwg
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CHK'D BY: RDV
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SHEET TITLE

DETAILS & SCHEDULES

SHEET NUMBER

M502

SHEET 27 OF 31

Registered Professional Engineer — NEIL H. SPENCER No. 5484 — for Neil Spencer 4/12/06 — State of Utah

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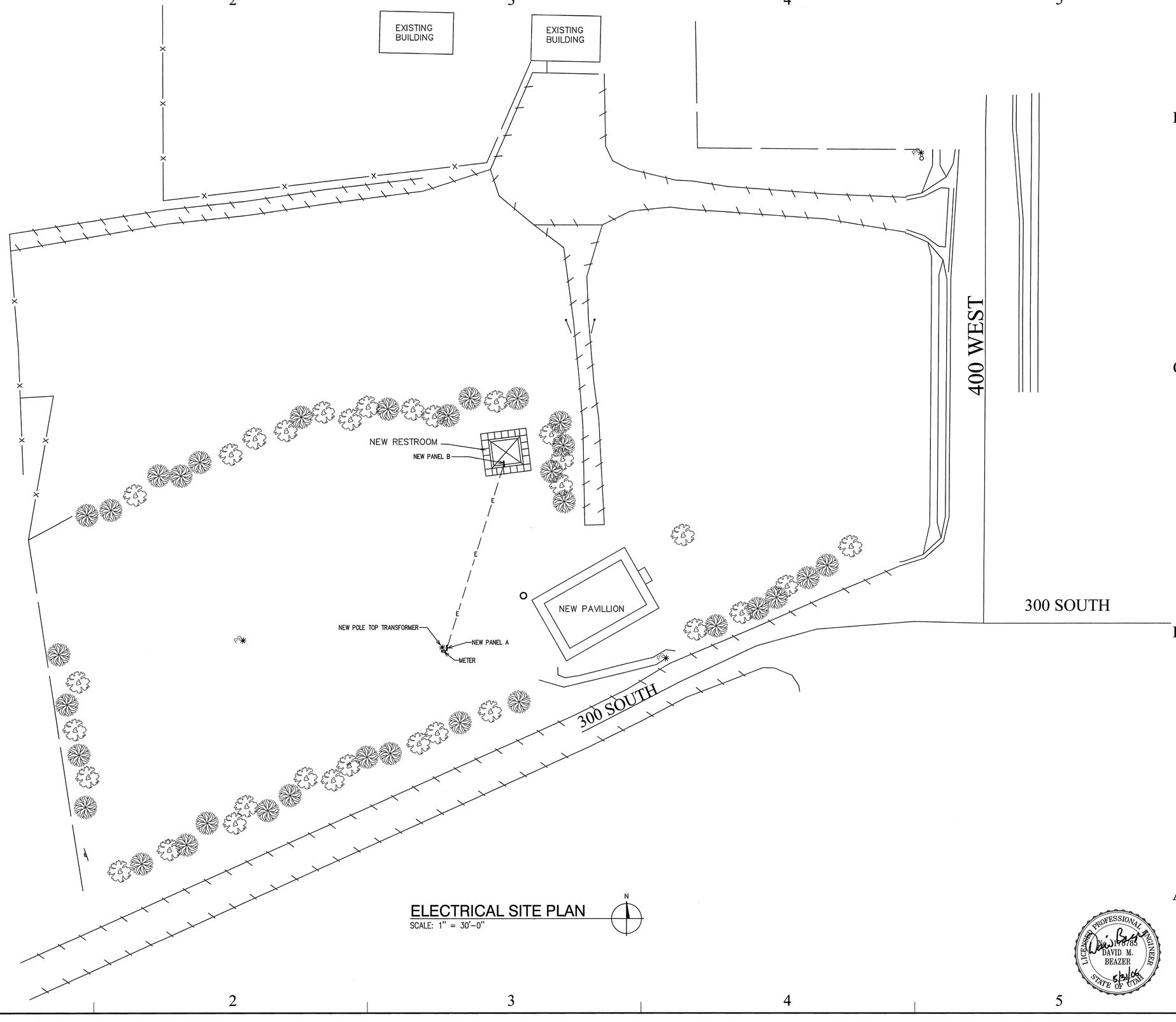

ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

N

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Department of Administrative Services

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	B	

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CAD DWG FILE:
DRAWN BY: RC
CHK'D BY: DB
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SHEET TITLE

ELECTRICAL
SITE PLAN

SHEET NUMBER

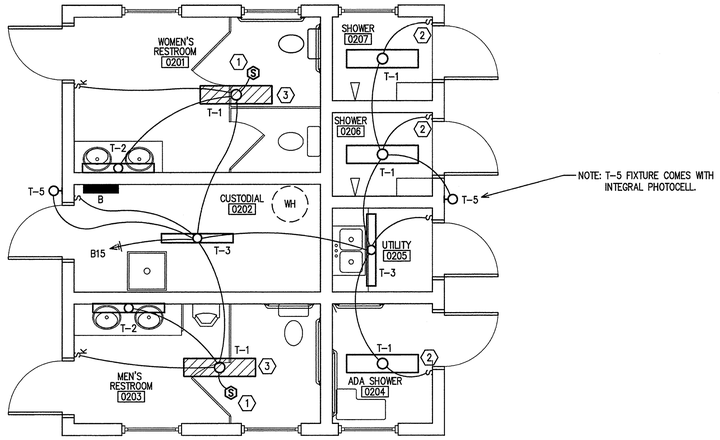
ES101

SHEET OF

LICENSED PROFESSIONAL ENGINEER
DAVID M. BEAZER
5/31/06
STATE OF UTAH

GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDENT AND ANY OTHER TRADES AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES AND OTHER ELECTRICAL GEAR SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE SUPERINTENDENT'S LOG. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
2. REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
3. ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST N.E.C. AND LOCAL CODES.
4. CONTRACTOR SHALL VERIFY ALL SURFACE MOUNT FLUORESCENT FIXTURES CONFORM TO N.E.C. 410-76.
5. ELECTRICAL CONTRACTOR SHALL FURNISH ALL MOTOR DISCONNECTS, STARTERS, AND CONTROL STATIONS FOR MECHANICAL EQUIPMENT UNLESS THE SAME IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT. VERIFY WITH MECHANICAL CONTRACTOR.
6. EMT CONDUIT IS NOT ALLOWED OUT OF DOORS, SEE SPECIFICATION SECTION ON RACEWAYS.
7. EXHAUST FANS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
8. MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16" TO BOTTOM AND 48" TO TOP RESPECTIVELY UNLESS OTHERWISE NOTED.
9. COORDINATE MOUNTING HEIGHT AND LOCATION OF "ALL" OUTLETS, SWITCHES, AUXILIARY EQUIPMENT, AND OTHER DEVICES WITH THE ARCHITECTURAL DRAWINGS. PRIOR TO INSTALLATION, REVIEW WITH THE GENERAL CONTRACTOR THE LOCATION OF MILLWORK AS A FINAL CHECK TO PREVENT COVERING OF ELECTRICAL ITEMS.
10. COORDINATE LOCATION OF CEILING LIGHT FIXTURES WITH THE REFLECTED CEILING PLAN.
11. INCLUDE IN BID ANY EXTRA CHARGES BY POWER COMPANY FOR SERVICE TO BUILDING.
12. ALL FLUORESCENT LAMPS SHALL BE FROM THE SAME MANUFACTURER. ONLY STANDARD LAMPS BY GENERAL ELECTRIC, PHILIPS, OR SYLVANIA WILL BE ACCEPTED.
13. A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFI" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
14. PROVIDE SAFETY DISCONNECTS AS REQUIRED AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT. FUSED PER MECHANICAL EQUIPMENT MANUFACTURERS RECOMMENDATIONS.
15. WHERE AUTOMATIC SPRINKLER CONTROLS ARE SHOWN ON THE LANDSCAPE OR ARCHITECTURAL DRAWINGS, PROVIDE A FLUSH SINGLE GANG J BOX BEHIND THE CONTROL AND CONNECT TO THE NEAREST OUTLET CIRCUIT.
16. COORDINATE LOCATION OF LIGHT FIXTURES IN MECHANICAL ROOMS WITH MECHANICAL EQUIPMENT. FINAL LOCATION TO BE DETERMINED AFTER DUCTWORK INSTALLATION. CHAIN SUSPEND FIXTURES UNDER DUCTWORK OR CONDUIT RACKS AS REQUIRED.
17. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL PANEL CLEARANCES PER N.E.C. 110-26 AND 384-4 AND NOTIFY ALL OTHER TRADES ON THE JOB OF THESE CODE REQUIREMENTS.
18. DISCONNECT SWITCHES SHOWN IN APPROXIMATE LOCATION ONLY. CONTRACTOR FIELD VERIFY LOCATION OF ALL ELECTRICAL SWITCHES AND MOTOR CONTROL FOR PROPER CODE CLEARANCE. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS WITH OTHER TRADES REGARDING PROPER EQUIPMENT CLEARANCES.
19. CONNECT EMERGENCY CIRCUIT OF EMERGENCY LIGHT BATTERY PACK TO UNSWITCHED LIGHTING CIRCUIT. INSTALL EXTRA CONDUCTORS AS REQUIRED. BATTERY PACK MUST BE FED FROM SAME CIRCUIT AS THE FIXTURE IT SERVES. WIRE SO LAMPS IN NORMAL MODE ARE SWITCHED WITH OTHER LIGHTS IN AREA.
20. PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING INFORMATION ON LIGHTS AND OUTLETS. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.
21. BEFORE RUNNING CONDUITS OR PLACING OUTLETS AND EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND SPECIFICATIONS OF THE OTHER TRADES SERVED BY THE CONDUIT OR OUTLETS.
22. ALL ELECTRICAL EQUIPMENT SHALL BE LOCATED SO AS TO NOT INTERFERE WITH WOOD TRIM AND MOLDINGS. ELECTRICAL CONTRACTOR SHALL REVIEW FINISH SCHEDULES BEFORE ROUGH IN OF OUTLET BOXES OR SWITCH BOXES TO PREVENT BOXES FROM BEING PLACED BEHIND OR IN TRIMS AND MOLDINGS. REFER SPECIAL CONDITIONS TO ARCHITECT.
23. FLUORESCENT EMERGENCY LIGHT BATTERY PACKS SHALL BE CONNECTED SO AS TO BE ABLE TO OPERATE IN THE TEST MODE WHEN THE NORMAL SWITCH LEG IS TURNED ON AND SHALL ILLUMINATE ONE 40 WATT LAMP UNLESS OTHERWISE NOTED. THE TEST BUTTON SHALL BE ACCESSIBLE FOR EXTERNAL OPERATION.
24. WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "BLUE PRINT READY" AUTOCAD ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR DISKS OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE DRAWINGS ON MYLAR.
25. ELECTRICAL CONTRACTOR SHALL CONTACT POWER COMPANY WITHIN THE FIRST WEEK OF THE START OF CONSTRUCTION AND NOTIFY THEM OF THE PROBABLE DATE WHEN THE NEW ELECTRICAL CONNECTION WILL BE NEEDED.
26. ALL CONVENIENCE OUTLETS MUST BE MOUNTED FLUSH WITH THE COVER PLATE AND SECURED FIRMLY TO THE OUTLET BOX. LOOSE OR SPONGY MOUNTED OUTLETS WILL NOT BE ACCEPTED.
27. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL SWITCH LOCATIONS WITH THE GENERAL CONTRACTOR PRIOR TO ROUGH IN IN ORDER TO PREVENT ANY SWITCHES FROM BEING LOCATED ON THE WRONG SIDE OF THE DOOR.



LIGHTING PLAN
SCALE: 1/4" = 1'-0"

KEYED NOTES

1. WATT STOPPER DT300 OCCUPANCY SENSOR AND B120E-P POWER PACK. WIRE IN SERIES WITH SWITCH.
2. HUBBELL HBL1221ILC SWITCH (LIGHT ON WITH LOAD OFF) WITH HUBBELL HBL1795 WEATHERPROOF SWITCH COVER PLATE.
3. INSTALL EMERGENCY BATTERY PACK IN THIS FIXTURE TO OPERATE ONE LAMP AT 1100 LUMENS.

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER/CATALOG NO.	MOUNTING	LAMPS
T-1	FAILSAFE FWS 232 120 GEB10 WET LOCATION RATED	SURFACE	FO32/735
T-2	FAILSAFE FWW 232 120 GEB10	WALL ABOVE MIRROR	FO32/735
T-3	LITHONIA C232 GEB10 WGCUN	SURFACE	FO32/735
T-4	LITHONIA TDM 232 AR 120 GEB10RS	SURFACE	FO32/735
T-5	McPHILBEN 101 WT 50MH 120 CBA PCB	WALL, HEIGHT PER ARCHITECT	50W MH PER MANUFACTURER

ELECTRICAL SYMBOLS

- ○ CEILING FIXTURE OUTLET
- ▭ FLUORESCENT FIXTURE WITH OUTLET BOX ABOVE (OR REMOTE), SEE FIXTURE SCHEDULE
- ▨ EMERGENCY FIXTURE
- S SINGLE POLE SWITCH
- ⇒ DUPLEX OUTLET
- WP ⇒ WEATHERPROOF DUPLEX OUTLET
- GFI ⇒ GROUND FAULT INTERRUPTER OUTLET (EACH INDIVIDUALLY PROTECTED)
- J JUNCTION BOX
- F FAN MOTOR
- S OCCUPANCY SENSOR
- FUSED DISCONNECT (FUSED UNLESS NOTED), 10K AIC MINIMUM
- S_M MANUAL STARTER WITH OVERLOAD RELAY
- ▬ PANELBOARD

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MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: RC
CHK'D BY: DB

SHEET TITLE

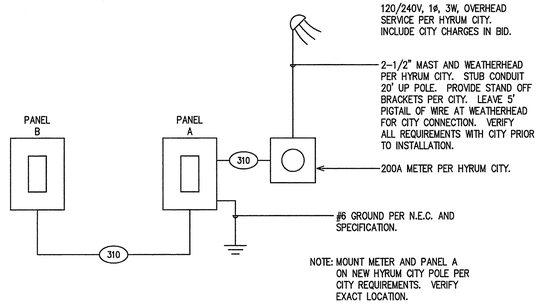
LIGHTING PLAN

SHEET NUMBER

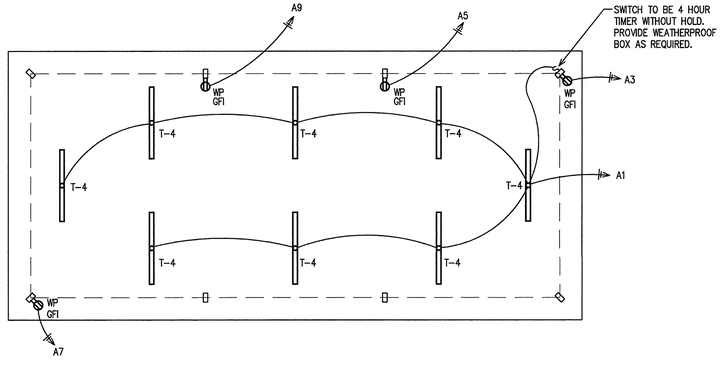
E201

SHEET OF

SERVICE ENTRANCE & FEEDER CONDUIT–CONDUCTOR SCHEDULE					
TYPE	CONDUCTOR QUAN.	CONDUCTOR SIZE	COND SIZE	AMP	INSUL-ATION
20	2	10	3/4	30	THHN, THWN, XHHW
30	3	↓	↓	↓	↓
40	4	↓	↓	↓	↓
28	2	8	↓	40	↓
38	3	↓	1	↓	↓
48	4	↓	↓	↓	↓
26	2	6	↓	55	↓
36	3	↓	↓	↓	↓
46	4	↓	↓	↓	↓
34	3	4	1 1/4	70	↓
44	4	↓	↓	↓	↓
33	3	3	1 1/4	85	↓
43	4	↓	↓	↓	↓
311	3	1	1 1/2	110	↓
411	4	↓	↓	↓	↓
310	3	1/0	↓	150	↓
410	4	↓	2	↓	↓
320	3	2/0	↓	175	↓
420	4	↓	↓	↓	↓
330	3	3/0	↓	200	↓
430	4	↓	↓	↓	↓
340	3	4/0	↓	230	↓
440	4	↓	2 1/2	↓	↓
325	3	250	↓	255	↓
425	4	↓	3	↓	↓
335	3	350	↓	310	↓
435	4	↓	↓	↓	↓
350	3	500	↓	380	↓
450	4	↓	3 1/2	↓	↓



ONE LINE DIAGRAM
NO SCALE



PAVILION ELECTRICAL PLAN
SCALE: 1/8" = 1'–0"

N

LICENSED PROFESSIONAL ENGINEER
No. 176183
DAVID M. BEAZER
5/31/06
STATE OF UTAH

State of Utah
Department of Administrative Services

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CAD DWG FILE:
DRAWN BY: RC
CHK'D BY: DB

SHEET TITLE

PAVILION
ELECTRICAL PLAN

SHEET NUMBER

E202

SHEET OF

PANEL A	☒ NEW ☐ EXISTING	TYPE NQOD	1 ø 3 WIRE 120/240 VOLTS	LOCATION	MOUNTING
☐ Bolt on breakers ☐ Isolated ground bus		REMARKS: NEMA 3R, LOCKABLE SERVICE DISCONNECT. PROVIDE SUB-FEED LUGS TO PANEL B.			☐ flush ☒ surface; 150 amp. main; ☐ lugs ☒ breaker

No.	BRKR. A	BRKR. P	CIRCUIT DESCRIPTION	L	O	M	Wire	CIRC. LOAD	Phase Loads A	Phase Loads C	CIRC. LOAD	Wire	L	O	M	CIRCUIT DESCRIPTION	BRKR. A	BRKR. P	No.
1	20	1	PAVILION LIGHTS	8			12	1136	1136	·						SPACE			2
3			PAVILION OUTLETS		1		12	180	·	180						SPACE			4
5					1		12	180	180	·						SPARE	20	1	6
7					1		12	180	·	180									8
9					1		12	180	180	·									10
11			SPACE						·										12
13										·									14
15									·							SPACE			16
17										·									18
19									·										20
21										·									22
23									·										24
25										·									26
27									·										28
29										·									30

FEEDER: (310) TOTALS 1496 360 AMPS/PHASE 12 3 AIC 10000 parallel runs 1

PANEL B	☒ NEW ☐ EXISTING	TYPE NQOD	1 ø 3 WIRE 120/240 VOLTS	LOCATION	MOUNTING
☐ Bolt on breakers ☐ Isolated ground bus		REMARKS: SERVICE DISCONNECT, GROUNDING PER N.E.C.			☐ flush ☒ surface; 150 amp. main; ☐ lugs ☒ breaker

No.	BRKR. A	BRKR. P	CIRCUIT DESCRIPTION	L	O	M	Wire	CIRC. LOAD	Phase Loads A	Phase Loads C	CIRC. LOAD	Wire	L	O	M	CIRCUIT DESCRIPTION	BRKR. A	BRKR. P	No.
1	20	1	UTILITY OUTLETS		3		12	540	540	·						SPARE	20	1	2
3	20	1	RESTROOM/CUST. OUTLETS		4			720	·	720									4
5	20	1	DCP/1			1		720	720	·									6
7			EF/1			1		1176	·	1176									8
9			FLUSH TRANSFORMER			2		1440	1440	·									10
11						2		1440	·	1440						SPACE			12
13						2		1440	1440	·									14
15			LIGHTS			9		639	·	639									16
17			SPACE							·									18
19			SPACE						·										20
21	30	2	ECH/1			1	10	2400	2400	·									22
23	–	–	–				10	2400	·	2400									24
25	30	2	ECH/2			1	10	2400	2400	·									26
27	–	–	–				10	2400	·	3900	1500	12			1	ECH/3	20	2	28
29			SPACE						1500	·	1500	12				–	–	–	30

FEEDER: (310) TOTALS 10440 10275 AMPS/PHASE 87 86 AIC 10000 parallel runs 1

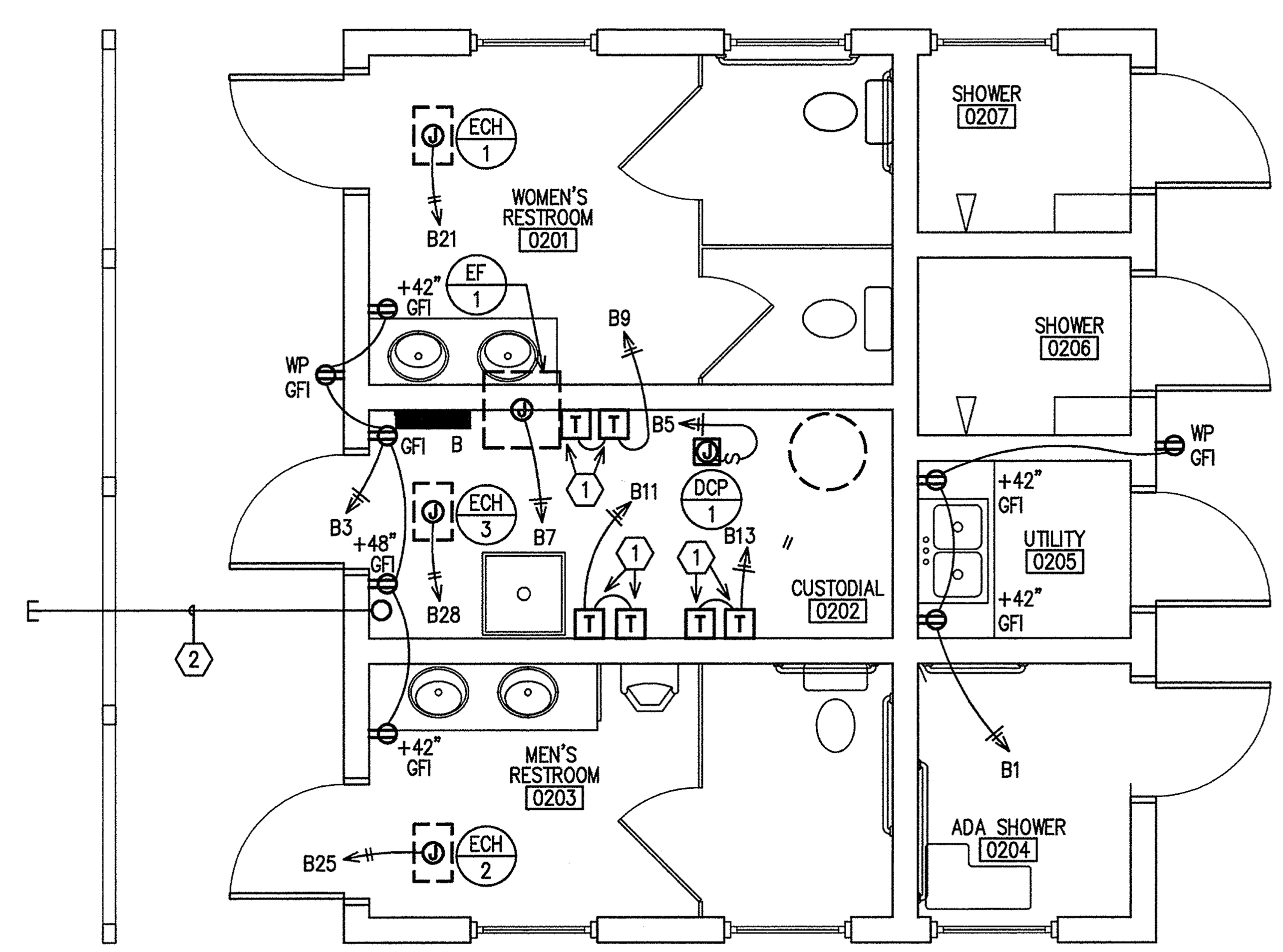
MECHANICAL EQUIPMENT SCHEDULE

SYM	DESCRIPTION	LOAD	VOLTS	PHASE	CONTROL CIRCUIT BY	* STARTER BY	SAFETY DISCONNECT BY	REMARKS
DCP/1	DOMESTIC CIRC. PUMP	1/25 HP	120V	1	MECH	MECH	ELEC	
EF/1	EXHAUST FAN	1/2 HP	115V	1	MECH	MECH	MECH	
ECH/1	ELECTRIC CABINET HEATER	4800W	240V	1	MECH	MECH	MECH	
ECH/2	ELECTRIC CABINET HEATER	4800W	240V	1	MECH	MECH	MECH	
ECH/3	ELECTRIC CABINET HEATER	3000W	240V	1	MECH	MECH	MECH	
T	FLUSH VALVE TRANSFORMER	6A	120	1	MECH	MECH	ELEC	

* ELECTRICAL CONTRACTOR VERIFY SINGLE SPEED OR TWO SPEED STARTERS WITH MECHANICAL DRAWINGS.

KEYED NOTES

1. PROVIDE TOGGLE DISCONNECT OR OUTLET AT FLUSH VALVE TRANSFORMER LOCATIONS AS REQUIRED.
2. STUB 2" CONDUIT FOR SPRINKLER CONTROL LINES OUT PAST CONCRETE. CAP AND RECORD EXACT LOCATION. 2" CONDUIT TO STUB UP ON INSIDE WALL PER ARCHITECT.



POWER PLAN
SCALE: 1/4" = 1'-0"

N

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BUILDING NAME:
RM# 10505
STATE OF UTAH
DNR
STATE PARKS
CACHE COUNTY, UT

PROJECT TITLE:
HYRUM STATE PARK
GROUP AREA
RESTROOM
PARKING
IMPROVEMENTS

MARK	DATE	DESCRIPTION

ISSUE TYPE: CONSTRUCTION DRAWINGS.

ISSUE DATE: JUNE, 2006

DFCM PROJECT NO: 06189510
CAD PROJECT NO: 5705023
CAD DWG FILE:
DRAWN BY: RC
CHK'D BY: DB

SHEET TITLE
POWER PLAN

SHEET NUMBER
E301

SHEET OF